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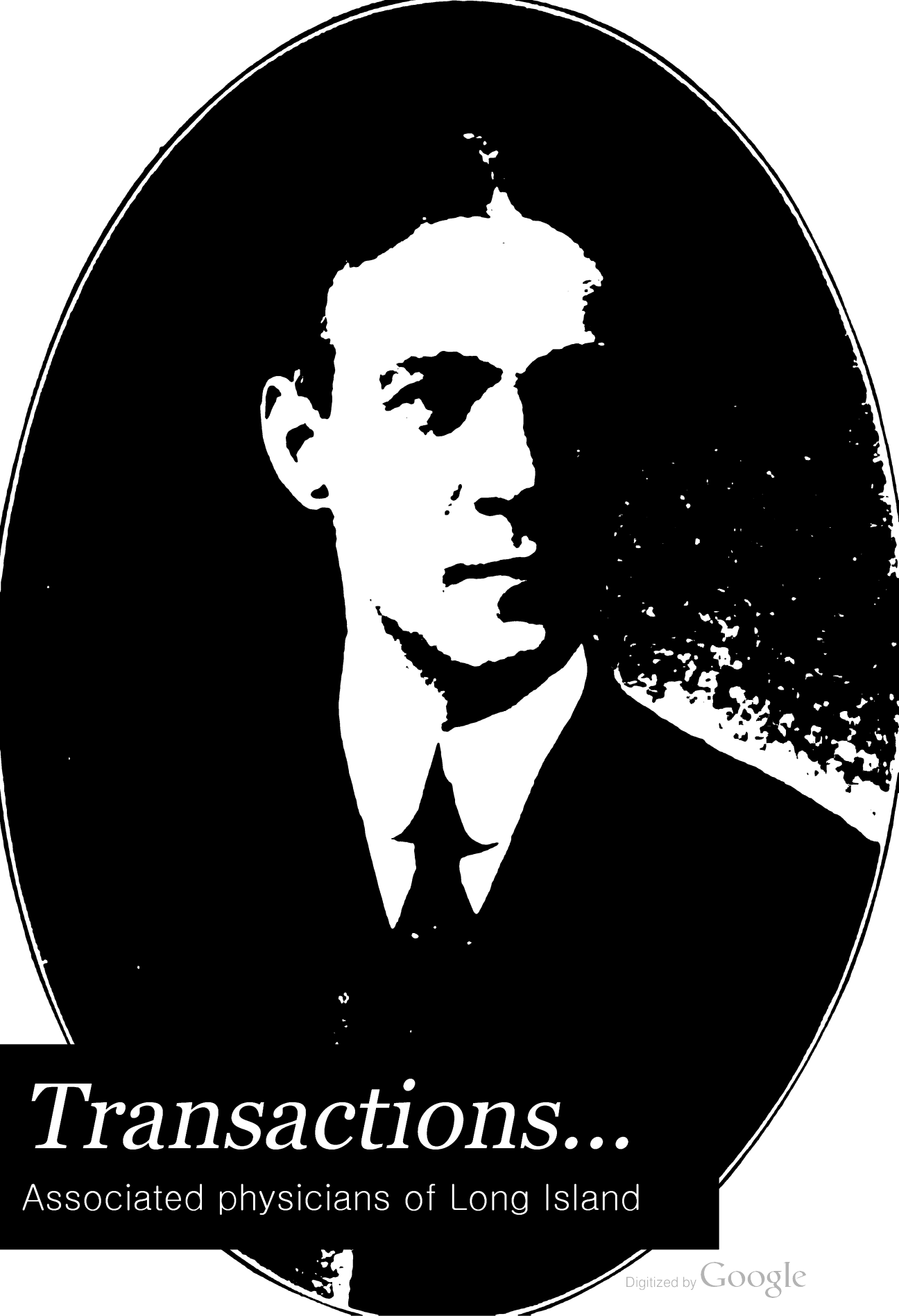

Transactions...

Associated physicians of Long Island

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DR. R. W. WESTBROOK
1145 DEAN STREET,
BROOKLYN, - N. Y.

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ROBERT J. MORRISON, M.D.,
President.

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TRANSACTIONS OF THE

ASSOCIATED PHYSICIANS OF LONG ISLAND

VOLUME V

JUNE, 1903 TO JUNE, 1904

BROOKLYN, N. Y.
ASSOCIATED PHYSICIANS OF LONG ISLAND
1904

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PROGRAM OF MEETINGS.

June 13, 1903, Southampton:

Presentation of New Instruments. A. H. Terry, Patchogue.

Presentation of Specimen. C. F. Barber, Brooklyn.

The Home or the Hospital? George McNaughton, Brooklyn.

The Treatment of Hemorrhoids by Injections. A. H. Terry, Patchogue.

October 17, 1903, Garden City:

Presentation of Case: Perforating Gunshot Wound of the Spinal Cord in the lower Cervical Region; Laminectomy. Lewis S. Pilcher, Brooklyn.

Presentation of Radiographs. G. L. Buist, Brooklyn.

Fracture of Sternum; Report of My Own Case. George T. Fanning, Smithtown Branch.

Presentation of the Histories of Twelve Prostatectomies. Lewis S. Pilcher, Brooklyn.

January 23, 1904, Brooklyn:

Presentation of a Portable Operating Table. W. H. Maddren, Brooklyn.

Ethyl Chloride as a General Anaesthetic. A. F. Erdmann, Brooklyn.

Some Observations on the Treatment of Fractures. J. P. Warbasse, Brooklyn.

Inflammation of the Femoral Vein as a Complication in Medicine and Surgery. C. H. Goodrich, Brooklyn.

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PREFATORY NOTE.

The editors desire to announce that the Association does not hold itself responsible for opinions enunciated in papers or in discussions as printed in these Transactions.

NATHAN T. BEERS, JR., M.D., Brooklyn, Chairman.
WILLIAM H. ZABRISKIE, M.D., Glen Cove.
WILLIAM E. BUTLER, M.D., Brooklyn.

Committee on Publication.

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EXECUTIVE TRANSACTIONS

OF THE

ASSOCIATED PHYSICIANS OF LONG ISLAND.

Sixteenth Regular Meeting, held at the Art Gallery, Southampton, L. I., Saturday, June 13, 1903.

The meeting was called to order at 3.30 P. M., the President, Dr. William H. Ross, Brentwood, presiding.

The minutes of the previous meeting were read and approved.

PRESIDENT'S ADDRESS.

The President then presented his inaugural address.

On motion, duly seconded and carried, the recommendations made by the President were referred to a committee consisting of the last three preceding presidents of the society.

The Committee reported as follows:

1. Regarding the recommendation that the Association should devote more time to a study of Long Island, its climatic features, natural conditions, endemic diseases, and healthfulness, the Committee suggests that this matter be referred to the Committee on Public Health with a request for an early report.

2. That a committee be appointed to investigate the study of Tetanus on Long Island. That the committee shall be a special committee, and that Dr. E. H. Wilson, Brooklyn, of the Hoagland Laboratory, be appointed its chairman, is suggested.

3. Regarding a committee on water supply and the effect of diverting it to other uses. This recommendation is approved and it is suggested that a committee of three be appointed, of which the President, Dr. William H. Ross, Brentwood, shall be the chairman.

4. That Garden City be made the permanent place of the October meeting. Approved.

5. That the last three preceding presidents of the Association be appointed a committee to revise the by-laws. Approved.

On motion, duly seconded, the above report was accepted and its recommendations approved.

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REPORT OF MEMBERSHIP COMMITTEE.

The Committee recommended that the Secretary prepare a circular letter to be sent to eligible members of the profession in the three counties of Long Island, inviting them to join the Association.

The following names were presented for membership and duly elected:

Charles A. Luce, Amityville.
J. P. Moore, 211 Franklin Street, Astoria.
Walter G. Frey, 116 Third Street, Long Island City.
William J. Burnett, 129 Third Street, Long Island City.
Benjamin G. Strong, 434 Jackson Avenue, Long Island City.
P. H. Bumster, 36 Ely Avenue, Long Island City.
Frederick A. Wright, Glen Cove.
Irving L. Walker, Central Islip.
Edward T. Murray, Central Islip.
H. G. Gibson, Jr., Central Islip.
Marcus B. Hyman, Central Islip.
Frank H. Magness, Central Islip.
E. Forest Preston, Amityville.
William F. Koerner, 154 Rodney Street, Brooklyn.
R. H. Sullivan, 42 Macon Street, Brooklyn.
E. S. Bishop, 919 Bedford Avenue, Brooklyn.
Charles J. Hettesheimer, 309 Wyckoff Avenue, Brooklyn.
William C. Woolsey, 29 Lafayette Avenue, Brooklyn.
Francis H. Miller, 64 Pennsylvania Avenue, Brooklyn.
Paul M. Pilcher, 386 Grand Avenue, Brooklyn.
David E. Hoag, 985 Lafayette Avenue, Brooklyn.
Norman P. Geis, 455 Classon Avenue, Brooklyn.
Robert E. Coughlan, 286 47th Street, Brooklyn.
F. J. McCammon, 359 Stuyvesant Avenue, Brooklyn.
F. J. Kirk, 404 Hamburg Avenue, Brooklyn.

Professor George G. Scott, of the New York University, was elected an honorary member of the Association.

The report of the Committee on Tuberculosis on Long Island was read by the Chairman, Dr. C. F. Barber, Brooklyn.

On motion, duly seconded and carried, the report of this committee was referred back to the committee with a request that the committee continue its investigations on the statistics of

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Tuberculosis on Long Island, in view of the conflicting testimony given at the meeting.

The report of the Committee on Public Health was presented and approved.

The report of the Committee on Distribution of the Anopheles Mosquito on Long Island was read by its Chairman, Professor George G. Scott, New York. Report approved and committee continued.

The resignation of Drs. Samuel Blume, Riverhead, and J. T. Duryea, Brooklyn, were received and accepted.

SCIENTIFIC SESSION.

Dr. Frank E. West, Brooklyn, in the chair.

Presentation of New Instruments: Urethral Sounds. Dr. A. H. Terry, Patchogue.

Presentation of Specimen: Inflamed Vermiform Appendix with Mucilaginous Contents. Dr. C. F. Barber, Brooklyn.

PAPER.

"The Home or the Hospital?" Dr. G. McNaughton, Brooklyn.

Discussed by Drs. C. F. Barber, Brooklyn; L. S. Pilcher, Brooklyn; E. S. Moore, Bayshore; G. R. Fowler, Brooklyn, and H. E. Hewlett, Babylon. Closed by the writer.

PAPER.

"The Treatment of Hemorrhoids by Injections." Dr. A. H. Terry, Patchogue.

Discussed by Drs. W. B. Savage, East Islip; W. F. Campbell, Brooklyn; and F. Overton, Patchogue. Closed by the writer.

On motion, a vote of thanks was tendered S. H. Parrish, Esq. of Southampton for the use of the Art Gallery as a place of meeting.

On motion, duly seconded, the meeting was declared adjourned.

James Cole Hancock, M.D.,
Secretary.

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Seventeenth Regular Meeting, held at the Garden City Hotel, Garden City, L. I., Saturday, October 17, 1903.

The meeting was called to order by the President, Dr. William H. Ross, Brentwood.

The minutes of the previous meeting were read and approved.

REPORT OF MEMBERSHIP COMMITTEE.

The Committee presented the following names for membership:

James T. Gallagher, 449 Lafayette Avenue, Brooklyn.
J. D. Shea, 427 Eighth Street, Brooklyn.
William H. Shepard, 324 52d Street, Brooklyn.
E. A. Parker, 262 McDonough Street, Brooklyn.
J. C. MacEvitt, 401 Clinton Street, Brooklyn.
J. F. Fitzgerald, Kings County Hospital, Brooklyn.
John Rankin, 600 Jefferson Avenue, Brooklyn.
Walter A. Sherwood, 562 Bergen Street, Brooklyn.
A. D. Jacques, Lynbrook.

On motion, the Secretary was empowered to cast one ballot for the above gentlemen and they were declared elected.

Reports from the following committees were read and accepted; Legal, Public Health, and the Committee to Investigate the Distribution of the Anopheles Mosquito on Long Island.

The resignations of Drs. W. J. Ryan, Central Islip, and B. Onuf, Brooklyn, were received and accepted.

SCIENTIFIC SESSION.

Dr. Frank E. West, Brooklyn, in the chair.

Presentation of Case: Perforating Gunshot Wound of the Spinal Cord in the lower Cervical Region; Laminectomy. Dr. Lewis S. Pilcher, Brooklyn.

Presentation of Radiographs; Two Cases of Epithelioma treated by X-Rays. Dr. George L. Buist, Brooklyn.

PAPER.

"Fracture of the Sternum; Report of My Own Case." Dr. George T. Fanning, Smithtown Branch.

Discussed by Drs. William H. Ross, Brentwood; and Walter Truslow, Brooklyn.

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Presentation of the Histories of Twelve Prostatectomies. Dr. Lewis S. Pilcher, Brooklyn.

Discussed by Drs. J. P. Warbasse, Brooklyn; G. M. Muren, Brooklyn; C. P. Gildersleeve, Brooklyn; Walter Wood, Brooklyn; H. B. Delatour, Brooklyn; William Maddren, Brooklyn; and Paul M. Pilcher, Brooklyn. Closed by Dr. Pilcher.

On motion, duly seconded, the meeting was declared adjourned.

JAMES COLE HANCOCK, M. D.,
Secretary.

Sixth Annual Meeting (Eighteenth Stated Meeting), held in the Library Building of the Medical Society of the County of Kings, 1313 Bedford Avenue, Brooklyn, N. Y., Saturday, January 23, 1904.

The President, Dr. William H. Ross, Brentwood, presiding.

The minutes of the previous annual meeting were read and approved.

REPORT OF MEMBERSHIP COMMITTEE.

The following names were presented, and on motion, seconded, were elected members:

Clarence C. Miles, Greenport.
G. S. Hunter, Sag Harbor.
William C. Weekes, Babylon.
Milton B. Davis, Patchogue.
Adrian P. van Deinse, Sayville.
C. H. MacVean, Kings Co. Hospital, Brooklyn.
George E. Deely, 224a Sixth Avenue, Brooklyn.
John G. Williams, 753a Union Street, Brooklyn.
George L. Buist, Jr., 90 Halsey Street, Brooklyn.
Adolph F. Erdmann, 408 Ninth Street, Brooklyn.
Palmer Townsend, 588 Jefferson Avenue, Brooklyn.
Henry M. Mills, 192a Sixth Avenue, Brooklyn.
James H. B. Dowd, 3923 Fort Hamilton Avenue, Brooklyn.

The reports of the Historical and Public Health Committees were then read and approved.

On motion the Sub-Committees on Tetanus and on the Investigation of the Water Supply were continued.

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REPORT OF THE SECRETARY.

Dr. James Cole Hancock, Brooklyn, presented his report:

Mr. President: The stated meetings during the past year have been well attended, and have been entirely successful from every point of view.

There is at present a membership of 337 active members, and three honoraries. Of the active members, 103 reside outside of Brooklyn, leaving 234 in that city.

Thirty-three new members have been added during the past year, nineteen coming from Kings County and the remaining fourteen from the counties of Queens, Nassau and Suffolk.

There have been three deaths and six resignations.

We are again indebted to the officers of the Long Island Railroad Company for the transportation facilities so generously provided at each meeting.

The courtesy of Samuel L. Parrish, Esq., in placing the Art Gallery at the disposal of the Association for a meeting-place, made the Southampton meeting a memorably pleasant one.

Respectfully submitted,

JAMES COLE HANCOCK, M. D.,
Secretary.

On motion, duly seconded, the report of the Secretary was approved.

REPORT OF THE TREASURER.

The Treasurer reported as follows:

RECEIPTS.

Cash on hand, January 23, 1903	$143.26
Received from dues, etc	825.60
	$968.86

DISBURSEMENTS.

Disbursements	$804.30
Balance in Treasury January 23, 1904	$164.56

Respectfully submitted,

HENRI M. AUGER, M. D.,
Treasurer.

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The President appointed Drs. W. B. Brinsmade, Brooklyn, and J. R. Stivers, Brooklyn, a committee to audit the accounts of the Treasurer; and on their recommendation, the report of the Treasurer was accepted and ordered filed.

The Secretary read a letter from the American Congress on Tuberculosis inviting the Association to appoint a committee to represent the Association at the meeting to be held in Washington, D. C., in April, 1905.

The Sub-Committee on Tuberculosis were voted to represent the Association.

The resignations of Drs. H. L. Bartlett, Brooklyn; Henry Conklin, Brooklyn; and Stanley G. Clark, Brooklyn, were presented and accepted.

ANNUAL ELECTION OF OFFICERS.

Single nominations were made, and the Secretary was directed to cast one ballot for each, resulting in the election of the following officers for the ensuing year:

President, Robert J. Morrison, Brooklyn; First Vice-President, J. E. Hutcheson, Rockville Centre; Second Vice-President, William B. Savage, East Islip; Third Vice-President, E. H. Bartley, Brooklyn; Secretary, James C. Hancock, Brooklyn; Treasurer, C. B. Bacon, Brooklyn.

SCIENTIFIC SESSION.

Dr. Frank E. West, Brooklyn, in the chair.

Presentation of New Instruments: A Portable Operating Table. Dr. W. H. Maddren, Brooklyn.

PAPER.

"Ethyl Chloride as a General Anæsthetic." Dr. A. F. Erdmann, Brooklyn.

PAPER.

"Some Observations on the Treatment of Fractures." Dr. James P. Warbasse, Brooklyn.

PAPER.

"Inflammation of the Femoral Vein as a Complication in Medicine and Surgery." Dr. Charles H. Goodrich, Brooklyn.

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The retiring President, Dr. William H. Ross, Brentwood, then introduced his successor, Dr. Robert J. Morrison, Brooklyn, who responded with a few remarks. Dr. Morrison announced that Dr. George A. Smith, in charge of the State Asylum at Central Islip, had invited the Association to hold its next meeting there.

On motion of Dr. E. S. Moore, Bayshore, seconded, the invitation was accepted.

On motion, seconded, the meeting was declared adjourned.

JAMES COLE HANCOCK, M. D.,
Secretary.

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SCIENTIFIC TRANSACTIONS

OF THE

ASSOCIATED PHYSICIANS OF LONG ISLAND.

THE HOME OR THE HOSPITAL?

GEORGE MCNAUGHTON, M.D.,

Brooklyn, N. Y.

So frequently does this question arise for immediate decision, that a deliberate consideration of it from the various points of view would seem opportune, interesting and possibly of some value to members of this association. Progress in any department implies changes in methods: formerly it was rare for a patient to enter a hospital for any kind of treatment who could avoid doing so; now, particularly in surgical work of the kind classed as major, the question of a hospital always comes up.

In our country there are hospitals of various kinds; first, those which are wholly charitable in their functions and in their support. The attending staff does not expect fees from the patients who are treated and the patients pay nothing for their care. These institutions are maintained entirely by public funds, no endowments or money contributions are received. To such hospitals should come only those who are too poor to employ a physician at home. Hospitals of this kind are usually well conducted, for the public is notoriously generous in the care of its sick poor. The treatment is administered only by those who desire to see satisfactory results, therefore there can be no question of the wisdom in advising the indigent sick, to avail themselves of the privilege of one of these hospitals. Curiously, however, these patients often require much urging before they can be induced to enter one of these institutions!

Second, we have the semi-public hospital, which is supported by endowments, voluntary contributions, and from the rental of rooms used by private patients. In New York City a certain amount is allowed for the care of patients who are unable to pay anything. The amount paid at the present time is said to be

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inadequate for the proper maintenance of the sick. It is the intention of the Charities Department to care for all cases in its own institutions, but if, for one reason or another, the hospital inspector thinks it is not best to remove the patient, he or she will be cared for and the city will reimburse the hospital in the manner stated. These cases are carefully inspected and the result is that the income from that source is extremely limited. A hospital of this class also entertains the very poor, in free beds, the expense of which is borne by the institution. Denominational hospitals come under this head, some of them having endowments sufficient to care for many sick poor. A few semi-public hospitals allow any physician to attend private cases which they send in.

The third class, the private hospital is an institution without access to public funds and no voluntary contributions, depending wholly upon the rental of rooms and board. Sometimes the word hospital is not used, but for ethical reasons "sanitarium" substituted. Perhaps in most instances these are conducted by a single individual, occasionally by several, such accommodation becoming necessary for the care of his cases under direct supervision in order that his peculiar methods be carried out. Again, a physician or surgeon may find that it is impossible to attend to his work if much scattered, while by centralization he is able to do more in a satisfactory manner. It is doubted if private institutions of themselves produce a profit.

In deciding whether a patient shall be treated at home or in an institution, the patient's welfare will naturally be the first consideration. What has the hospital to offer? In most instances a building especially constructed with a view to the proper care of the sick and disabled. A house staff of recent graduates in medicine who have secured their positions by competitive examinations, a corps of nurses in training, who work under the supervision of a superintendent, and all needful materials which are ordinarilly used in the treatment of surgical and medical cases. The equipment includes baths, cold coils, etc., which are not usually accessible in a private house. If a surgical case, an operating room with all the accessories of a modern hospital which implies arrangement for as perfect asepsis as can be obtained by the expenditure of money, under the direction of the most careful architects aided by the visiting staff of the institution. It would almost seem that these arguments would outweight any that might be brought against them. To what degree may this same

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asepsis be attained in a private home? Is it not possible to secure an area of cleanliness in most homes of people who are in moderate circumstances. It is the belief of the writer that a satisfactory operating-room can be organized in almost any private house at slight expense, that sterilization of instruments and dressings can be accomplished with an exactness which in results compares favorably with similar work done in institutions. All that is required is a nurse thoroughly trained in her work. Special instruction should be given to nurses in the organization of the operating as well as the proper organization of the sick room.

The position of the general practitioner is perhaps sometimes not appreciated by the hospital surgeons and specialist. The more skilled the surgeon, the more progressive that branch of science, the greater the field of his work. Many pathological conditions, heretofore purely medical, are now classed as surgical and have passed from the jurisdiction of the medical attendant, with the natural result that there is a little taken from his work. The science of medicine has likewise progressed and the advance steps are in the line of preventive medicine, and more exact therapeusis, both of which have a tendency to diminish his work and consequently his income. There has been no increase in compensation for his excellence. Generally speaking, the better and more successful his efforts the less his income. It is not intended to claim that there are not many individual instances where this does not apply. A few days ago an excellent general practitioner stated that the money value of a case of diphtheria is fifty per cent. less than before the days of antitoxine. Not only is this a fact, but probably the total number of cases, owing to that remedy, as well as to improved sanitation, has decreased. This illustrates in a practical manner how increased skill actually diminished incomes.

Not many years since, the younger practitioner very carefully remained in town during the hot weather for the purpose of reaping a harvest in the work of attending to sick children. Owing to the better understanding of the preparation and preservation of foods, many physicians will pass an entire summer without seeing one case of what used to be called summer complaint. In this we have another example of how medical skill has diminished occupation. If proper equity were insisted upon, the physicians fees should be doubled. It is unnecessary to pursue this line of inquiry further; these facts have been mentioned simply to

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show that the general practitioner is entitled to special consideration. Some specialists evidently believe this, for they offer a percentage of fees received to the doctors who refer cases to them. This sort of division is not recommended by the ethical members of our profession, yet it shows a commercial spirit which the ordinary business man would not object to, and might perhaps, on the contrary, regard as only fair. Is there not a better way to meet this question. For instance, a surgical case requiring more special training in the performance of the operation than is possessed by the attending physician. A surgeon is consulted who may conduct a private sanitarium, or who may have access to one or more semi-public hospitals. An operation is clearly indicated, the patient is in what we call comfortable circumstances, is able and willing to pay a fair fee. Where shall the case be treated? the surgeon is asked. At once the hospital with all its equipment occurs to him as the proper place, and in most instances the hospital will be the place selected. The patient is conveyed there, and in the transit occurs his first risk, a certain amount of mental disturbance will be noted. The members of the family are upset and nervous, for they do not know whether the patient will ever return to them alive. If the case be an urgent one the hospital authorities are telephoned to prepare the operating-room, which is promptly and efficiently done, and the operation is performed without delay, under the precautions offered by the institution. The dispatch with which a patient is sometimes sent to the hospital is startling, and in keeping with the times. Having these cases all under one or two roofs makes it possible for the surgeon to attend to many such cases each day if need be. The after treatment is usually looked to by the surgeon's assistant, or the house surgeon. Sometimes the operating surgeon does not see the patient after leaving the operating room. The nursing is carried on by an undergraduate, under the supervision of a superintendent, and the results are usually satisfactory.

The general practitioner, who usually selects the consultant, and who occupies the position of adviser, is invited to the operation, and usually visits the patient at the hospital, yet he has transferred his control and authority. The operating surgeon is captain of the ship, and no matter how hard he may try, it will be difficult for the patient not to believe he is the superior practitioner, and this often leads to complications that are not desired

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by any one concerned. The various methods of gaining information about a patient in an institution tends to upset the content which should be a feature in all treatment. Everybody seen, from the superintendent to the hallboy, furnishes information, which is as various as its sources. Not so when this work is done in the home. There the family physician is captain, and from him should all information be derived. This arrangement does not detract from the special skill of the consultant, and it allows the family doctor to retain the regard and respect of this family to which he is entitled. This paper is not in any sense intended to belittle the hospitals and their work. Hospitals are necessary and we have not too many of them, and they must be supported. It is more than likely that most of this support will, in the future, come from private patients.

Specialists who occupy positions in the hospitals have usually earned these honors, and the special knowledge which they possess has come after much gratuitous labor, and they also are entitled to consideration. It is probable that the question of hospital or home will always be settled according to the circumstances of each case. It is proper to remember that it is not necessary to remove all cases to an institution, even those seriously ill, and that as good results may be obtained in the home under the direct supervision of the family physician. The home may command the same surgeon, the same first assistant, a more experienced anæsthetizer, and a graduate nurse selected by either the consultant or the family physician. The home treatment usually means more work for all interested, but with it comes the compensation of comfort to the patient, his friends and satisfaction to the family physician.

DISCUSSION.

Dr. C. F. Barber, Brooklyn: I was started in the practice of medicine under what perhaps might be termed to-day an old-time surgeon, but I think he did pretty good work. I was, therefore, taught to do most of my own surgical work in the homes of the patients.

Dr. McNaughton has spoken of the attentions of the relatives in the care of a patient. This is perfectly true, and I fully realize that men doing a large business cannot go around the city operating at distant points and perform all the operations neces-

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sary for them to do. Nevertheless, when it comes to a consideration of cleanliness, comfort and care of the patient, it is best obtained in the home.

In hospital operating it is an easy matter to telephone the hospital to have everything ready, to proceed to the hospital, to operate, to go home and dismiss the case from our mind. Of course, operating in a house is more difficult and trying. We have to consider the care and surroundings of the patient after operation and also the family. After a number of years work in this line, I have yet to experience any regret for operating on a patient at his home. If you have a few nurses whom you know to be perfectly competent, you may detail one of them in sufficient time to go to the house and prepare a room. I do not think it necessary to take down everything in the room, to scrub the walls, etc. I have yet to see a bad result of septic nature occurring where sepsis was not present before the operation. I know that in hospitals the rooms cannot be aseptic. The operating rooms are necessarily exposed to septic conditions. Patients are taken in hurriedly. Those who are septic will certainly contaminate any room, and after a time it is only fair to reason that these operating rooms are more or less contaminated. In private rooms, where cases which have been pus cases or gangrenous, and have existed for any length of time, one is running somewhat of a risk in putting clean cases there.

I do not think it a great trouble to have a nurse go to a house and prepare everything, and then operate on the case and see it again a few hours afterwards. The assurance that the family physician will take care of the patient after the operation counts a good deal to the family. They are conversant with his methods and his way, and he keeps in touch with the case. The surgeon can always be found in case of necessity, and can go to the house quickly and consult with the family physician.

As to time, I cannot see that that is a great factor. If a man is well equipped and prepared, he can proceed to any house and do a major operation in quick time. For instance, I saw a case of appendicitis a few weeks ago on Sunday at 5 o'clock, perhaps two miles from my home. I was at that house on the second visit within 2½ hours. I was back at my dinner at 9.30 that night, and the patient had been operated on and placed in care of a nurse, and that was all there was to it. There was no time lost, and the patient had not been subjected to riding in an ambulance

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over roughly paved streets and handled two or three times before the operation was done.

As to the care of the patient, I think there is no argument necessary concerning that. We know that where the homes are good, they are all the more comfortable and better cared for and certainly better off than they are in hospitals. The nurses you select yourself you know are capable, while in the hospital your patients are under the care of undergraduate nurses.

The anæsthetist is a man of your own selection, one whom you have confidence in, and you have little or nothing to worry over in that direction. In a hospital you have more or less anxiety regarding the anaesthetist. The men are young, not always experienced, and in many instances are either too timid or else too bold.

Dr. L. S. Pilcher, Brooklyn: I think it has been brought forward with a great deal of emphasis that the relation of the family attendant in surgical cases, and the possibility of disadvantage to the patient and the certainty of loss to the physician are undeniable in the habit, which has become so prevalent of the transferal of surgical cases from their homes to hospitals for their further care. From the standpoint of the private practitioner, it seems to me, that the argument is a strong one, and one that ought not to be minimized.

On the other hand, it seems to me that there are points in connection with surgical work from the standpoint of the patients themselves, that might be more elaborated upon, and that might possibly, when we come to sum up the whole question, cause our conclusion to be different from what it otherwise would be.

Is it not true that the surgery of the present day is becoming attendant with more and more responsibility in the line of what we attempt to do and the degree of perfection with which we are expected to carry on our work? Is it not true that in the course of our operations at the present day we are often confronted by conditions which are unexpected to us, for which, without the presence of all the equipment of a well organized operating room and hospital, we would find ourselves seriously embarrassed in attempting to meet them? Certainly that is the case.

A very large part of our work at the present time is abdominal, and no abdomen is opened with an absolute certainty on the part of the surgeon as to what he may not be required to do before that abdomen is closed. We may, it seems to me, take out then from the category of operations which might as well be done at

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BROOKLYN, N. Y.

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home as in the hospital, all abdominal work. It is true there are many cases in which an operation is simple, but the point I wish to make here is, that before the abdomen is opened it is attended with a great deal of uncertainty as to what will have to be done before the abdomen is closed.

The more simple operations we ought to be able to do at home, such as the removal of tonsils, clearing out the vault of the pharynx, the removal of hemorrhoids and curettage of the uterus, with the very best results to our patients, and yet it is often the case that our best endeavors are disarranged by the sense of necessity on our part of deference to the family physician.

I feel at the present moment that I am in the presence of a large class of family practitioners. I have arrived pretty nearly toward the further end of professional experience, and looking back upon many years, I know from personal observation, that oftentimes the best devised methods are interfered with and sometimes the issue brought to a disastrous conclusion by the sense of courtesy, which in the home the operating surgeon feels that he must show towards the family physician, who feels that there is a responsibility which he has that he must retain a certain amount of control over that patient. From the standpoint of the family physician this is well; from the standpoint of the surgeon it is embarrassing; from the standpoint of the patient it is often disastrous, and it seems to me it is the standpoint of the patient which we should first consider. That is one of the greatest difficulties in carrying on an operation in the home, and I would like to impress it on the appreciation and sense of my colleagues who are general practitioners. We wish to do that which is right, we wish to show every courtesy, but too often this point I am now making becomes one of exceeding importance in the matter of the result which is to be gained.

I look, therefore, upon the transferal of the patient to the hospital, where the patient is placed under a certain degree of military discipline, and where the possibility of securing the attention of those who are thoroughly trained to the most exacting tenets of technique with regard to that particular case is assured, as of great importance to the patient.

It is to be said further with regard to the development of surgical work that the claims of perfect work at the present day are such that only one who is continually engaged in the work, who is securing by reason of this habit an almost second nature of pre-

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caution in carrying on his work, it is only such a one that can do the best work, and it would be far better for the interests of the community that there be a few men who would be trained in that sort of work, to whom such work could be committed; not as men who are rivals for the general consideration of the community with the general practitioners, but as men who are set apart for this work, who are recognized as having devoted themselves especially to this work. It would be far better to have such men and recognize them, and send those cases which demand special skill to those men, because they have that training and that skill, than that every practitioner should try to be a surgeon.

These are items in connection with the surgical work of the twentieth century which it is wise for us to consider, and the tendency of the public in general is along the lines I have suggested, *i. e.*, to recognize the higher possibilities of surgery, or the necessity for having special equipment and surroundings for securing that, and the necessity for having a special and continued experience for carrying it on. When patients need such help they should insist upon having it, and it would be wisest for the profession as a whole recognizing these conditions to align themselves with this tendency rather than to go back to the conditions of twenty-five years ago.

I appreciate the force of all the arguments that have been made. For the first twenty years of my professional life whatever surgical work I had, had to be done in the homes of my patients, as I had no hospital appointment. Since I have had the opportunities of doing work in a hospital, I have been able to contrast the work of now with the work of the past, and I think that I can appreciate the feelings of those who are not privileged to have a hospital appointment. At the same time I feel positive that the better surgery will be done and is being done in hospital surroundings than can be done in the best regulated homes.

Dr. E. S. Moore, Bayshore: You have heard ably from the surgical side of the question, and perhaps it would be well to have a word from the general practitioner. What we did twenty-five or thirty years ago cannot be the test of what we should do to-day. We know that in hospital practice, with all the surgical appliances up to the scientific attainments of our profession to-day, that the best results are obtained.

If that be so—particularly the practitioner outside of the city—must not place himself in a position with his patient, that he may

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have the criticism of the community that he has not given the best opportunity (I speak now of major operations) to that patient. If he does, and is only doing it in a Pickwickian sense, it will be against him. In the cities many of these results if not up-to-date pass away, and are not noticed because they are not known, but let the practitioner in any out-of-town place have some of these results, and the consequences will be, that his pecuniary conditions will be very much to his disadvantage; and, therefore, I say, as a practitioner of nearly thirty years experience, both in the city and country, I believe that when you come to the major operations, it will be best to send to some surgeon in the city, who is in touch with the best hospital conditions of to-day, and thus keep ourselves free from the responsibility of criticism of not doing our full duty.

Dr. G. R. Fowler, Brooklyn: I cannot but feel that there are two sides to this as to every question, and that both sides should be heard in the most forceful manner. It is a growing question of to-day, and it involves both the happiness of the patient, the pecuniary interests of the practitioner, and in addition to that the life of the patient. Now, which is to be considered of the greatest importance? The feeling of sentimentalism on the part of freinds, who wish to have the patient operated upon at home, the pecuniary interests of the family doctor, who should be the patient's best friend, or the patient's life?

I have had experience in operations in private practice—so-called domiciliary surgery, domestic surgery, amateur surgery, I am ashamed to say. That should not be so, and I am quite sure (looking back over past years), that patients who elect to go to a hospital well and thoroughly equipped, and the family physician who realizes that this is the best course for the family to pursue, and the relatives and friends who will acquiesce to that which is the best for the patient, should be accorded all possible praise.

Why do you select a man to operate upon your patient? Because he has had large experience. How did he get his experience? By performing a large number of operations. He did not do them by machinery. He did them with his hands. He did not do them in a minute. It took long years to be able to do them. Why does he continue to be skillful in the performance of operations? Because he is continually doing them—this refers to his work in charity hospitals, because he is constantly doing work gratuitously—his time is largely occupied with that, and perhaps

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four-fifths of his work is done for the express purpose of maintaining that skillful manipulation, that experience of keeping that touch, which is absolutely necessary both to his diagnostic skill and the mechanical execution of the operation.

How is he going to do it and go from house to house to operate? He cannot possibly do it. He must operate under circumstances where most of the patients can be gathered under one roof, and where his operative work must be carried on in the speediest manner possible, and if private patients are not sent to him for operation they are deprived of his experience and skill. If you want to get a man for your operative work, who is in constant touch with that work, you must of necessity place the patients under conditions where he can operate on them, and unless you do that it will be impossible for him to do it in most cases.

The patients that can be operated on in their homes are largely patients who can be operated on by the general practitioner—they do not require a surgeon. Operations for fistula or hemorrhoids require, as a rule, no surgical skill, and there are a great many operative proceedures which can be carried on by the general practitioner himself and not sent to the surgeon, but there are operations which cannot be carried out by the practitioner, and if they are not placed under the care of special surgeons in hospitals, they will be less likely to recover. In other words, in my judgment, practitioners operating on cases at home, will have a higher mortality than surgeons operating in hospitals.

I was surprised to see the position put forward here, that the interests of the general practitioner, so far as pecuniary reward is concerned, should not be forgotten. If by that it is intended to imply, that he shall have some pecuniary reward for the work that is to be done—a commission—it is to be said to the shame of the profession, and the slightest hint that a commission shall be given by the surgeon to the physician for furnishing him with patients is, to my mind, the very height of impudence to offer such a thing. Much of that sort of thing has been done. I have been informed that in the cities of the West it is quite a common practice, but I am happy in the belief that it has never obtained in and about the City of New York.

I did not intend to speak at such length, but I cannot close before calling your attention to some statements in the matter of operating rooms. I do not know what kind of operating rooms one of the speakers had reference to, or had been in contact with,

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but in properly equipped rooms with facilities for steam and with the pains usually taken for attaining every aseptic condition, it is hardly to be believed in and about the City of New York that there is an operating room that can be said to be in the condition to which the speaker referred.

As to the selection of the anæsthetist, our anæsthetists in the hospital are trained. Our hospital staffs are selected on competitive examination, and are entirely competent to look after an anæsthetic, and also take care of the patient in the intervals of the visits of the surgeon. To say the patients are scarcely seen by the operating surgeon after he has operated on them I think is begging the question. The surgeon is in constant communication with the hospital by telephone, and his visits there are amply sufficient to cover the dangers which may arise.

I thank you for giving me the pleasure of speaking, and I think you must realize that while I do not deprecate operations in private homes, yet the highest skill is obtained by those who do hospital work and have little or no time to devote to home surgery.

Dr. H. E. Hewlett, Babylon: In the first place, the patient and the family have always to be taken into consideration. I have been an interne in the City Hospital. That is, of course, a hospital where rather dirty cases are sent, and I have noticed better results occur after operations in private practice. Of course, if you are going to have a man dress a wound afterwards who is not competent, you are not going to get good results. If you send a man to town with suppurative appendicitis, and the jolting ruptures the pus sac, he will probably die. If you have an ex-interne from a hospital, who has had some experience and who will take care of the patient, why let the operator come down from the city and bring his nurses and assistants. I have noticed in my five years of practice that results have been very good in home operations. I know several men who are always willing to come from the city for an operation when sent for, and claim no more than for one at the hospital.

Another thing: in the hospital the man to give the ether is the last man on. It is his first attempt at medical work. I remember I gave ether in the beginning in a poor way. The man who gives ether best is the general practitioner, who has had to give it under varying circumstances.

Dr. F. E. West, Brooklyn: From the side of the physician it seems to me the subject is of a great deal of interest. The phy-

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sician oftentimes has to consider the question of home or hospital. In many a disease that question arises, and while the surgeons are monopolizing most of the diseases they must not expect to have all at the hospital. Give us a chance occasionally.

Dr. G. McNaughton, Brooklyn (closing): The idea of presenting this paper was to elicit a heart to heart discussion. In reply to Dr. Pilcher's remarks that it is impossible to equip a private house for a major operation, it seems to me that is not entirely true. In an operating room in a well equipped hospital, the whole surgical apparatus is not sterilized usually. They arrange for a certain operation and prepare a certain number of instruments and dressings, according to previous experience of the requirements, and that does not demand preparation of a large bulk, because as surgery has progressed, methods have become simplified and the number of instruments required less.

I had no idea of bringing up the question Dr. Fowler contested, that certain operations were not as well performed in the hospital. We all know that they are. The well trained general practitioner is perfectly competent to take charge of post-operation cases. Most of my work has been done in hospitals (I suppose 80 per cent. of it). I have had reason to realize there is another side to the question, that the general practitioner becomes interested in a case has watched it and understands it, that when he transfers that case to the hospital he loses his connection with it, and the patient also loses the benefit which may result from his doctor's experience.

There are many general practitioners, and more of them every year, who have had hospital and surgical experience, who have been the very men who took care of these cases in the hospital mentioned by Dr. Fowler. They are just as competent to take care of the after-treatment of surgical cases at the present day as they were while in the hospital, and more so.

So far as compensation is concerned, the matter of living is rather a prominent one, and there are some general practitioners who have to consider that. An operation is to be done, and an operator selected to do it who is a hospital surgeon of experience, then the after-treatment can be taken care of by the general practitioner. He receives a certain compensation for the work. The work of the surgeon is not so great, and he can receive a fair compensation.

I think the matter of compensation is a competent one to discuss.

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It seems none of us are above that. The greater amount of work will always be done in hospitals. No one would attempt to argue that question. At the same time the general practitioner has certain rights which are frequently ignored.

I am sure that a discussion from the medical side would be very proper. There are cases of nervous people that can not be treated at home, that ought to be sent to the hospital, cases where you want a certain amount of discipline of the patient, in order to effect a cure. If we had hospitals to send such cases to, and where they would receive skilled treatment, I think that would be of great advantage. We should mention that hospitals are not conducted for the treatment of surgical cases only, but that is very proper, as well as advantageous to the patient, to occasionally give a medical case the benefit of hospital treatment.

THE TREATMENT OF HEMORRHOIDS BY INJECTIONS.

BY ARTHUR H. TERRY, M.D.,

Patchogue, N. Y.

When I was a third year student of medicine I heard of the use of carbolic acid injections for hemorrhoids, but only in terms of condemnation. I was told that while many cures had been claimed, this method of treatment was entirely irregular and the reports of cures unreliable. It was said that theoretically there was great danger in such injections. One of the chief dangers was embolism, although no death from this complication had been reported. But so much evidence in favor of the method accumulated it was finally decided to try it in a selected case at one of the New York hospitals. On trying it the very complication occurred that had been feared and the patient died of abscess of the liver due to portal embolism.

On hearing all this my confidence in the profession was greatly increased and I became enthusiastic. I was aware of the fact that hemorrhoids were often associated with liver disorders as an effect, but I did not then know that suppurative pylephlebitis and multiple abscess of the liver had ever resulted from the ligation of hemorrhoids and other traumatisms of the rectum.

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I supposed this was a unique instance wherein the time-honored custom of a disordered liver causing hemorrhoidal disease had been exactly reversed by the carbolic acid injections. This evidence of ability to foretell results so accurately seemed to indicate that, after all, medicine had become one of the exact sciences. I considered that this correct prediction of the precise effect likely to be caused by an untried experiment, ranked with that celebrated astronomical achievement of Leverrier and Adams, who calculated the position of Neptune before that planet was known to exist. I determined never to meddle with injecting hemorrhoids.

In the *American Journal of the Medical Sciences* for July, 1885, I read a convincing article by Dr. Charles B. Kelsey, recommending the injection treatment and reporting two hundred cases cured without embolism and without serious complication of any kind. This article referred also to the successful use of carbolic acid injections by an irregular practitioner, who was Dr. Kelsey's neighbor. The injections used by Dr. Kelsey were of a strength varying from 10 to 50 per cent., the amount of the injection and the strength to be governed by the condition found and the effect desired. He claimed, in this article, to be able to produce a slough or not, at will—a claim which was soon disputed. In bad cases he intentionally produced large sloughs, resulting in the entire obliteration of the mass, the base of which healed by granulation.

After having abandoned operations in cases of every variety, and every degree of severity, and after having pushed the injections in a way to bring out all their possibilities for both good and evil, he has since repudiated them altogether as uncertain and dangerous. But, justified by favorable results obtained, the faith of some of the disciples has outlived that of the founder. In deference, however, to evidence that injections are not altogether free from risk, and with a belief that the danger bears some relation to the severity of the reaction, there has been a tendency of late to use either weaker solutions or smaller doses of strong ones. It is needless to say that an injection, however small, should never be thrown directly into a venous sinus.

A 10-per-cent. mixture of carbolic acid in equal parts of Pond's extract of Hamamelis and water is a formula which has been used extensively. I have never tried it.

In 1888 I saw in the columns of a medical journal the following

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prescription for injecting piles: Rub together 1 drachm of salicylic acid and 1½ drachms of glycerin, add 2 drachms of carbolic acid. To this add 1 drachm of borax and 1½ drachms of glycerin. Let stand until clear, and inject 3 to 5 drops into small piles and 5 to 8 into large ones. The writer advised repeating every ten days, said he had used it a long time, had found it entirely safe, that it never gave rise to inflammation or suppuration and that it caused the piles to become smaller and disappear.

This is the formula I have invariably used for injections, although I have not depended on injections exclusively, in the treatment of hemorrhoids.

Shortly after reading this formula, a gentleman who had taken a cottage near my office, and who was undergoing, or perhaps I should say was indulging, in treatment by an irregular practitioner, presumed to be the one before referred to, came to me and told me he would like to avoid the inconvenience of going to New York every week, and asked me if I could not treat him for hemorrhoids by the injection method. Having read Dr. Kelsey's and the other article mentioned, and being influenced by the patient's satisfaction with the injections, I decided to undertake the case. For I considered that when an intelligent person, suffering from disease which was not dangerous to life, had been honestly told the advantages and drawbacks of the means of relief available, if he elected to be relieved eventually by treatment rather than to be cured at once by radical interference, there was no good reason why he should be denied the privilege. While this man absolutely refused to have his disease attacked *vi et armis,* it was evident that to be treated gently, *gradatem et seriatim,* had for him a peculiar charm. For on asking him if he had found the treatment painful, he replied, "On the contrary, it was agreeable rather than otherwise." This indicated a perfection of skill which must be very difficult to attain and of which its possessor will probably continue to enjoy a monopoly. The patient's experience with me was quite different. He had an irritable sphincter. The hemorrhoids did not protrude and could not be easily brought down. The speculum hurt him and my rather thorough preliminary examination gave him so much more pain than the other doctor did in his treatment that he not unnaturally decided that the irregular man had a better understanding of his case. He returned to his first doctor, who, as I afterward learned, cured him completely, and I hope

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agreeably. This experience was discouraging and humiliating, but I saw where at least a part of the trouble was and immediately took measures to improve my armamentarium. Some time afterward I saw a patient at a clinic submit to the insertion of first a small and then a medium and finally the largest sized proctoscope, the first two without a murmur and the last with suppressed groans, while the class applauded his fortitude. The patient permitted one member of the class after another to examine him without any signs of rebellion, and I wondered how many private patients, examined in this way, would return to their tormentor for treatment.

The speculum that I now use and find very convenient is a light aluminum bivalve with slides in each side, known as O'Neil's speculum. This speculum requires very little expansion to become self-retaining and by opening the slides the hemorrhoids can be easily brought into view. There is very little tendency for a hemorrhoid to catch in the opening left on withdrawing the slide, a fault I have found in some other specula, causing the patient to suffer more from attempts to disengage the pile or to withdraw the speculum than he suffers from the introduction of the treatment.

I got along much better than at first with the next case I had.

Case I.—Mr. W., aged 40, well-driver, had suffered from hemorrhoids for several years. He did a great deal of hard work, both at home and in neighboring villages. He always carried a bulb syringe with him and when he had to relieve his bowels he used an injection, after which he would lie down for one or two hours. His condition finally became so serious that he was obliged to give up work, and he was confined to the house when I saw him. Examination showed several large hemorrhoids and a large mass on the right side was easily protruded. The case seemed too severe to think of curing with injections. An operation was clearly indicated and advised. On discussing the matter it was decided to try the carbolic acid. Injections of the solution I have mentioned were given at intervals of a week. At the end of a month he was much improved and resumed his work. Treatment was continued for another month. At the end of this time he was by no means cured, from my point of view. But he was very much better than he had been in a long time. About a year after he came to my office for another injection, saying that he was having some trouble again. This

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time I found it convenient to use a speculum to reach the part. Since then I have seen him many times, but have never treated him. He always refers to the great benefit he received from the injections. He was a very loquacious individual and had been inclined to boast of his suffering to every one who would listen. The vanity he had manifested about his disease was only exceeded by his elation at what he considered his remarkable cure. The gratuitous advertising he gave me was quite unsolicited and, therefore, entirely ethical, but it certainly was very effective, for I soon found myself with quite a large hemorrhoidal *clientele*. Most of the cases I have treated in this way have been of moderate severity and the results have been very satisfactory. It not infrequently happens that patients express great relief from the injections before the condition, on examination, appears to be much improved. This has one disadvantage compared to operations, where all that is necessary can be done at once, for occasionally patients, for one reason or another, abandon the treatment when the symptoms are relieved and before they are entirely well.

The following case shows the benefit that may be gained in still less favorable conditions:

CASE II.—Mrs. R., aged 60, sallow, anemic, suffering with chronic nephritis, edema of ankles and face, subject to attacks of facial erysipelas. Has suffered with hemorrhoids and prolapse of rectum for twenty years. During past five years has had several alarming hemorrhages from the rectum. Various insufficient measures have been tried to support the prolapse. At the time of beginning treatment she could not stand up, or walk across the floor, without holding up the parts with the hand. Sphincter and all the neighboring tissues relaxed. It was evident that an extensive operation would be required to cure the case, but her general condition was such that it was not to be advised. Treatment was begun without a promise of cure, but she was told it would benefit her. The mucous membrane covering the irregular mass was in some places thickened, while other places were excoriated and bled at the slightest touch. The bleeding points were touched with nitric acid and on several occasions with the thermocautery. The first injection caused troublesome bleeding at the needle puncture. Subsequent injections were given in sounder tissue near the base of the swelling and an attempt made to cause a contraction of the deeper parts.

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After fifteen injections the treatment was discontinued. This patient had some pain after the injections, but as she was very nervous and timid, and had a great deal of pain anyway, it was difficult to estimate just how much pain the injections caused. After three of the injections there was slight strangury, an effect I had not seen in any other case. The prolapse still occurred when the bowels moved, but not at other times. She was able not only to go about the house and do light housework, but to walk a considerable distance comfortably. As the hemorrhages had been controlled and the urgent symptoms relieved it was not thought best to advise further local treatment for this patient, whose general condition was such that any kind of interference was badly borne and gave rise to some anxiety. While it is true that the result left much to be desired and was not comparable in thoroughness to what might have been attained by operation, or even by more vigorous or more persistent use of injections, still it added very much to the comfort and safety of the patient and made what had become the most serious of her ailments one of comparatively little importance.

But the injection method is not to be looked upon merely as a weak alternative to be used only where operation is contraindicated or refused. The cases in which the treatment is very satisfactory are those in which there is not extensive rectal disease, but where single well defined piles exist which refuse to yield to such palliative measures as ointments, suppositories and regulation of the bowels, and yet are not serious enough to require a surgical operation.

Case III.—Mrs. R., aged 40, said that for about two years she had had a little trouble in the rectum. "Something came down" when the bowels moved. Lately she had been much worse and this swelling seemed to come down in front of the movement and to interfere with defecation. Examination revealed a hemorrhoid, a little larger than a hazel nut, with a large base on the anterior wall of the rectum just inside the sphincter. It could be brought into view by passing a finger into the vagina and depressing it. When thus depressed it appeared much larger than it had on touching it. An injection was given and it was replaced. She returned in a week saying that the injection had given but trifling inconvenience and that she was better. This time it was more difficult to bring it down and a speculum was used and another injection made. She returned in ten days and

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said she had had no further trouble. A third injection was given and she was told that if she had no more symptoms she need not return. She returned, however, in two weeks, to be sure she was all right. There was not enough of the swelling left to indicate any further treatment and she was discharged.

CASE IV.—Mr. J., aged 79. Three years before had had an operation for enlarged prostate. He is dependent now on catheter, to empty bladder. Had occasionally suffered with hemorrhoids for years. For past year had had some pain on defecation and a movement is always followed by slight but persistent bleeding. Has tried a great variety of ointments and suppositories. On one side of the anus there is a tag over the site of an external hemorrhoid, which occasionally becomes inflamed and painful. Internally a small hemorrhoid attached by a long, narrow base, that extends one inch up the rectum. On the lower part of this hemorrhoid a small, wart-like growth that does not bleed. Several other points bleed easily. Patient is very timid about treatment. Eight small injections were given, and the patient was entirely cured. In this case not the slightest pain was experienced. The patient was too deaf to converse during the treatment and invariably asked afterward if I had made the injection. It was proposed to nip off the external tag under cocaine after the internal trouble was cured, but he said that he could not bear the thought of even a "snipping operation," and as the external hemorrhoid seldom troubled him he decided to let it alone. He would willingly have let me inject it, if I had so advised, but injections are not the treatment for external hemorrhoids.

I have attempted in this paper to give my own experience without theorizing or quoting authorities, and the cases I have selected will serve to show what may be expected from the cautious use of small injections.

I do not know that there is any special advantage in the combination I have used. I can simply state that I have used it for fifteen years in most of the cases that have occurred in my practice, and that I have never seen any bad results from it. I never use more than two minims at any one point, but often inject it in several places at one visit. I have never seen any sloughing and very rarely any painful inflammation. The reaction is generally limited to a small area about the puncture, and is shown by increased redness at that point. But occasionally there will be dull aching, lasting a day or two. I always tell patients that this may happen, but it is quite exceptional.

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The usefulness of caustic pastes for the cure of certain forms of cancer is none the less recognized because this treatment has been so largely used and abused by irregular men, who have lacked the necessary skill to meet the surgical indications, and the honesty to refer the cases elsewhere; nor should any useful procedure be frowned upon because it has been in bad company.

In regard to patients' objections to operation for piles, it must be admitted that they are not altogether groundless. Having an anesthetic administered, its often unpleasant after-effects, its occasional dangers, the discomfort, and even pain, or convalescence, which are sometimes very great, and the detention in bed are perfectly valid objections, and many sufferers go through life unrelieved rather than submit to the knife, who would be quite willing to permit a procedure which is only technically surgical and which, while the profession opposes it as unsurgical, the laity favors as non-surgical. One of the advantages of the X-ray treatment of epithelioma, even if it were no more effective than excision, is that it does not involve the use of the knife, to escape which patients are quite willing to sacrifice valuable time. Of course no conscientious physician, for the sake of conforming to his patient's wishes, will do anything that experience condemns, but I believe the chief danger of the treatment lies in attempts to make the injection complete with operative surgery in range of application and in promptness of results.

To the surgeon who does in a half hour or less what it will require weeks and perhaps months to accomplish by injections, and who very properly reasons that the objections to operations, important as they are, are of little consequence, compared to the certain benefit that will result, this method will seem intolerably slow and unsatisfactory. One is almost open to a charge of heresy who advocates slower and less certain means for the cure of diseases, which it is known can be quickly and completely cured by the precise operations of surgery. But the patients have to be consulted about what they will permit, as well as advised, and there can be no question but that all cases of hemorrhoids can be benefited, and many cases can be completely and comparatively painlessly cured, without the so much dreaded operations.

DISCUSSION.

Dr. W. B. Savage, Central Islip: Dr. Terry, with his combination of carbolic and salicylic acids, may have checked the pain

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in the cases of hemorrhoids he injected, but the trend of modern surgery to-day, I think, is not to consider the injection of hemorrhoids as a surgical measure. It can only be palliative at the best.

Patients present themselves for operation or treatment for hemorrhoids only when they are painful, and it is seldom that internal hemorrhoids are painful. It is usually when they come to the stage of prolapse or inflammation, that patients seek you. I have not done any injecting for hemorrhoids in eight years. Prior to that time I did several times with partial results. It was my misfortune quite recently to have two cases of hemorrhoids that had been injected with some caustic that I did not know, who presented extensive ulceration. In one case the ulceration was on the margin of the sphincter and caused considerable pain.

When injections produce a radical cure, they must produce sloughing in order to remove the tumor. If your tumor is not removed you have not had a radical cure. To inject an inflamed or prolapsed hemorrhoid with any caustic, I think is fraught with danger. There is danger of embolism, pyæmia, abscesses of the liver, and a good many such results, which could be obviated by a simple ligature. It is not any more painful, I think, to litigate a protruding hemorrhoid than it is to inject one. Once it is ligated and its contents everted, it is a simple matter to place it above the sphincter.

I believe, too, internal fistula is a result more often than we imagine of the injection treatment. It certainly does not result from ligature—statistics prove that. In injecting hemorrhoids we are very apt to have hemorrhage and with considerable inflammation. Ambrose, in his work on Rectal Male surgery, speaks of the practice in injecting hemorrhoids, and reports the following accidents out of 3,304 cases: 13 deaths—8 from embolism of the liver, 1 dangerous prostration, 1 abscess of the liver. There were 10 dangerous hemorrhages, 1 stricture of the rectum, violent pain in 89, carbolic poisoning in one, 19 sloughing and other accidents.

The addition of salicylic acid as an adjuvant to phenol, as spoken of by Dr. Terry, does not seem to me to be of much advantage. These injections should only be used as palliative methods. In what few I have had in former years, I have found that those in which the smallest percentage of acid was used, it failed, although there was less danger so far as deep sloughing was con-

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cerned. Both Kelsey and Matthews use a solution one part carbolic, two glycerin and three water. Matthews uses 10 to 12 drops of this solution, and Kelsey uses 5 drops with the best results.

I hope an operation will be devised for radical cure of hemorrhoids by injection without abscess. I hope at no distant day we will be able to report some success along these lines.

Dr. W. F. Campbell, Brooklyn: I think it is rather unfortunate to select a discusser of the paper, who is rather out of tune possibly with the opinions of the reader of the paper, and I feel rather in that position for the simple fact I have never used the carbolic acid method in the first place, and secondly, I do not think I will use it. Then, again, I have an inherent fear to injecting carbolic acid into the tissues of the body brought about by a little experience I had when only a medical student.

I attended a clinic given by a surgeon of large experience. He had a patient come in the operating theatre and sit down before the class. He said he proposed to cure an aneurism by the injection of carbolic acid. The injection was made, the patient turned around and said something to the operator. The operator announced to his audience, "Gentlemen, the patient says he tastes carbolic acid." He had no sooner said that when the patient toppled over dead. It made a profound impression on me at that time, and from the experience of various operators, good authorities in rectal surgery, the accidents they have had to quote—sometimes deaths—I have always considered it a sort of surgical maxim, never to inject carbolic acid into the tissues of the body, and much less would I inject it into a plexus of veins so intimately connected with the portal and general circulation.

It is very alluring, perhaps, this idea of being able to treat a patient in such a gentle manner. All you have to do is put them on a table, inject a few drops of carbolic, and they go home and to work. We like to treat patients in the most gentle manner possible, and if there was anything in this proposition safe, sound and certain, the method has been so long before the world, that the entire body of surgeons would be adopting it as the most popular method we have. As a matter of fact it is the least popular method. When we come to get the views of such men as Matthews, who reported cases before a medical society in 1878, and said he had to abandon the method because of the disastrous results, and such men as Allingham, who tried it and

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gave it up as uncertain and unsafe, and such men as Kelsey, who has been referred to, with his 200 cases, who afterwards abandoned it, and then the later authority, Gant, who says it ought to be used in only one single kind of case, and that where the hemorrhoidal area is exceedingly small and above the internal sphincter, and then at the end of the chapter he cites cases illustrating the various methods, and the cases he cites which were treated by carbolic acid injection, he says, were followed by sloughing and ulceration and conditions of that kind. Certainly not very complimentary to the method. Tuttle, who has written an exceedingly interesting work on diseases of the rectum, says, the only advantage gained by the patient is he escapes an incision at the expense of time and uncertain results.

We recognize the fact that there are two schools of injectionists, those who use the strong and those who use the weak solution. In using the strong solution, the result is a sloughing off of the pile, leaving an ulcerated base, which can become infected, and no one would compare it to a clean incised wound of the rectum.

The second school of injectionists, those of the weak method, hope to induce in the pile an indurated inflammation sufficient to shrivel up the pile, so that it will gradually go away. The criticism about that is this, that you can never tell exactly how much of an injection is going to produce the indurated inflammation. What will produce induration in one individual will not produce it in another. It all depends on the special effect on the tissues of the patient you are operating on.

The doctor has summed up well when he says, if you want a certain and sure method, get your patient to be operated on under an anæsthetic. If you can not get them to be operated on, you might use this treatment of injection. Personally I can not subscribe to the method, because it can not be placed under sound, safe and certain operative procedures.

Dr. A. H. Terry, Patchogue: I have never seen the solution produce a sloughing off of a pile, as has been alluded to. The result, it seems to me, is much like that you get after using the electrolytic needle. In trying to dislodge a tumor in that way, you get an irritation and reaction along the course of the injection. I have never used the injection strong enough to cause sloughing off of a large pile. I have never seen the base of a pile exposed as a raw ulcer. I have often seen a red point, showing where

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the needle entered, and showing where the resulting inflammation had been.

Of course, I can understand if these injections are used in large enough doses, or strong enough, a very large ulcer may result, and I suppose there may be a question as to just how much results you may get owing to idiosyncracies of patients. Personally I have never seen anything but good results—not even a sore troublesome about healing.

Dr. F. Overton, Patchogue: I am familiar with some of the cases Dr. Terry injected.

The speaker who preceded him spoke of the method as neither sound, safe or certain. It is sound because it satisfies the patients. If they are satisfied it seems to me that is enough for soundness. It is safe. Dr. Terry has had no bad experience. Dr. Terry finds it is pretty certain to relieve their suffering. It is not, of course, an absolute cure, but it does relieve the patient, so that he can go about safely and with comfort.

FRACTURE OF THE STERNUM: REPORT OF MY OWN CASE.

GEORGE T. FANNING, M.D.,

Smithtown Branch, L. I.

On the morning of June 4th, 1903, I received an early call to attend an obstetrical case about eight miles distant from my home. My horse had been harnessed and was standing in the carriage-house in his usual sleepy manner. After preparing myself for the trip, and unhooking the straps that held the horse, I stepped into the wagon, an open one-man road wagon. As I did so, I picked up the lap-duster and gave it a shake, which, I admit, was a very foolish thing to do without something in one's hands to control the horse. At that instant the horse shot out of the carriage-house more quickly than I could believe, and I was thrown from a standing position out of the rear end of the wagon, striking the plank floor upon the back of my shoulders and with my head jammed down upon the chest. With help I got up and walked to the house and laid upon the lounge for an hour, after which I had my man drive me to the place for which I had started. It proved to be an easy case, otherwise I should

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have been of no use, and I got along very well by letting the nurse do all the work. I found, when there, that I could do nothing with my hands in front of me. I could not remove my gloves except with my hand behind my back. I could not assist one hand with the other except from behind. While waiting at this place the gentleman of the house insisted upon bathing my chest with some liniment which he possessed and in which he had great faith. I let him bathe, but I found the more he bathed the worse I felt. My ride home from this trip was the most painful experience I have ever had. I reached home, however, with a most intense burning pain over the middle part of the sternum. It seemed almost impossible to breathe; the feeling of pressure over this region was most severe, and was increased by the respiratory act. As I had no pain anywhere else, I thought I must have some serious local lesion. After getting laid out on the lounge with a pillow between my shoulders, and taking one-third of a gr. of Morph. Sulph., I got some relief and remained in that position for five hours, Temperature 101 2-5.

Dr. W. H. Ross, of Brentwood, saw me that evening, and after a careful examination made a diagnosis of fracture of the sternum, and I was in full accord with him in the diagnosis. I was unable to use my hands even to feed myself for the first week, and could not make the least move without great pain. The character of the pain was a heavy weight or pressure with a sensation of friction between two surfaces. This fracture ran diagonally across the upper part of the gladiolus from the third rib on the left to the second on the right. The diagnostic points in this case were: pain, when pressure was made at the seat of fracture, the close limitation of the pain to the point or line of fracture, and the absence of other injuries that might give rise to it. Temperature remained from 100 to 101 2-5 for about one week and gradually dropped to normal. There is to this day a sensation of constriction over this part of the sternum.

I find in looking up the literature of fractures of the sternum, that this bone is not often fractured, and that very few cases have been recorded as the result of direct violence, and that when this does occur other bones in the immediate neighborhood are apt to be involved. A good many instances, however, are on record in which the bone has given way to indirect violence and muscular contraction. A curious case is mentioned by Malgaigne. A man was knocked down by a dray, the wheel of which went up

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on the left side of the chest, but not getting over the trunk, passed off the left arm, which, however, was uninjured. The next day, when the man came to the hospital, quite a noticeable swelling occupied the upper sternal region and the first piece of this bone, with the cartilage of the second rib on each side, made so marked a prominence in front that he thought he had to deal with a luxation, or with a transverse fracture with overlapping. He tried various manœuvers to accomplish reduction, but in vain; effusion occurred in the pleura, an abscess formed above the fracture, and the patient died on the thirty-third day. At the autopsy fractures were found in the semi-ossified cartilage of the first rib on the left side, as well as the second, third and fifth ribs on the same side. These had not been suspected at all. The sternum was broken transversely at the level of the third intercostal space, the upper fragment being slightly inclined backward, this fracture had also escaped notice. And lastly, a fracture was found situated above and to the left, detached from the bone, as if with a knife, a sort of scale, the base of which reached to the level of the second costal cartilage, comprising all the left sterno-clavicular articulation, the cutting edge of which was at the anterior face of the bone; the abscess had formed at the face of this fracture. Malgaigne quotes a case in which a ten-pin player, who bent forward to watch his ball, fell, striking a large stone; he was taken up dead with a fracture of the sternum.

A number of cases are on record in which fracture of the sternum would seem to have been caused by the impact of the chin, the vertebrae giving way and allowing the head to be forced forward and downward. Four such cases are observed by Hodgen, in three of which the patients had fallen backward striking on the shoulders. Rivington mentions a case in which "an acrobat, in turning a double somersault, fell about ten feet on the back of his head; he came down on some tan, and his head was violently flexed on to his chest, the injury caused a separation between the sixth and seventh cervical vertebrae and an oblique fracture of the sternum, such as might have been produced by the chin inclined to one side." Michiel records the case of "a seaman who fell into a hold, sustaining a dislocation of the fifth cervical vertebrae on the sixth, with fracture of the sternum, the periosteum remaining unruptured in the front. Spontaneous reduction of the luxation took place, there was a laceration of the lung, and the mediastinum became emphysematous; death

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occurred on the third day." Dr. Estes, in his work on fractures, says that, "Except from gunshot injuries, fractures of the sternum are very rare." He has recorded but two cases. The first case was produced by a crushing blow to the thorax, and was accompanied by fracture of several ribs on both sides and the clavicle on one side. The sternum was fractured transversely near the junction of the manubrium and gladiolus; this patient died in a short time. Dr. Estes' second case was an incomplete fracture in the case of a woman about fifty years of age, produced by indirect violence. The woman fell forwards down a flight of stairs and made violent efforts to stop her fall. When picked up she was badly bruised about the face and shoulders, but there was no apparent contusion on the chest; it was noticed that a peculiar projection existed in the upper middle part of the chest, which did not lessen as her contusions became better. Fourteen days after the injury a pronounced anterior bowing of the bone at the junction of the manubrium and gladiolus was noticed. The woman had considerable pain and great tenderness at the seat of fracture. Dr. Estes says that while there was no doubt of the existence of fracture, he did not think it advisable to risk making it a complete fracture by any forceful attempt at reduction. I find in looking over several works on fractures that very little is written on fractures of the sternum. The treatment of fracture of the sternum seems to consist in restricting the motion of the chest, as in fractures of the ribs, by firmly strapping it. I found in my own case great support from a plaster-of-paris jacket.

DISCUSSION.

Dr. W. H. Ross, Brentwood: The diagnosis was made from the fact that the only comfortable position the doctor could be gotten into was on his back with a small pillow placed between his shoulders, letting his shoulders fall down towards his back and throwing the upper part of his chest backward. Attempts to raise him, or any attempt on his part to move himself, produced intense pain in this region. That gave us the clue to investigate the sternum, and then we found a distinct point of tenderness, but no obvious displacement. After settling that there was something there that was serious, and rubbing the finger over it you could feel a distinct, but very slight, ridge, and that ridge was distinctly made out extending obliquely across the sternum.

The most interesting thing about the case, it seemed to me,

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was that the doctor could do almost anything he wanted to with his hands behind his back, but could not make use of them in front of him.

Dr. W. Truslow, Brooklyn: I would like to ask in what position the doctor was when the plaster jacket was put on? How was he placed?

Dr. W. H. Ross, Brentwood: In the standing position with a man standing behind and on a chair supporting him with his thumbs under the patient's arms and over extending the shoulders, so that when the plaster stiffened up he could not bend forward.

About two weeks afterwards we cut it down, as it became a little burdensome by that time. The pain was so much increased that we put the jacket on again, and held it by a bandage for quite a while longer. The plaster came above the point of fracture nearly as high as the collar.

ETHYL CHLORIDE AS A GENERAL ANESTHETIC.

BY A. F. ERDMANN, A.B., M.D.,

Brooklyn, N. Y.

Probably most American anesthetists and surgeons share the experience and opinion of the writer of a paper on Surgical Anesthesia (*Journal American Medical Association,* December 5, 1903, p. 1400), who says, "My experience with ethyl chloride as a general anesthetic is nil, but from the data at hand I am inclined to class it with the more dangerous anesthetics, and would expect it to be especially dangerous in cardiac and respiratory troubles." It is certainly true that an astonishingly small proportion of such practitioners are at all familiar with this most valuable anesthetic agent. The writer, after diligent inquiry, has been able to find only one surgeon in Brooklyn who is really using it. In Manhattan there are only a few more. In Philadelphia it is used at the University Hospital. Cunniston, in Boston, has now made use of it in 350 cases. Allen, at the Massachusetts General Hospital, has employed it in about 60 cases. There is a report of its use in the Medical Association, Chicago, 1900, xxxii, p. 710. Nor as yet have the English surgeons generally taken kindly to ethyl chloride. But on the continent, in France especially, many are

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turning from both nitrous oxide and bromide of ethyl to this recently anew exploited systemic anesthetic agent.

This anomalism appears still more strange when one considers what claims are made for ethyl chloride, and upon what facts the French, Swiss, and Germans base their good opinions. In a word, it is maintained that ethyl chloride is a relatively safe general anesthetic, exceedingly simple in its use, particularly pleasant to inhale, surprisingly rapid in both its action upon the body, and its escape from it, and happily much less liable to those unpleasant sequelæ, both serious and simple, which so often follow other anesthetics. The fact that some 30,000—estimated— anesthesias have already been given, should be enough to insure it a favorable attention, and when one considers in addition all the operations for which it has been successfully used, he is less surprised that some anesthetists do, and more surprised that some do not make use of ethyl chloride. Ware, of New York, for instance, has employed it 2,000 times, chiefly in minor surgery on women and children. Mazzoni[2] (Rome) has done laparotomies and a vaginal hysterectomy. Malherbe[3] (Paris) tells of a mammectomy and a herniotomy where ethyl chloride was used. In Birmingham[4] they do operations for strabismus under its influence. At Guy's Hospital[5] iridectomies are not uncommon. *La Presse Médicale,* June 29, 1901, reports enucleations and operations for muscular advancement where it was used. At Innsbruck[6] they had no bad results in employing with patients having heart lesions and respiratory affections. The pulse remained normal in a case of marked mitral obstruction, reported by Nové-Josserand.[7] This same surgeon operated in the presence of advanced phthisis. The Swiss surgeon, Bossart,[8] reports similar cases. Patients have been cyanotic and dyspnœic, requiring tracheotomy. Reboul[9] tells of a child four and one-half years of age, extremely feeble after a prolonged typhoid fever, in whom some abscesses were opened. A number of patients had a temperature of over 39.50 C., and some were suffering from emphysema and arteriosclerosis. An operation was done during the seventh month of pregnancy. A number of interesting experiences in midwifery are described by Lepage and Lorier,[1] and by Burnet (*The Medical Press,* December 10, 1902). I have myself had excellent results in forceps cases.

A lad, ten years of age, took it in all 33 times; another boy, twelve years of age, 12 times, and a woman of fifty-six years

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took it 10 times.[8] In neither an infant of three months nor a patient of seventy-nine years, was there any untoward symptom. A child[2] three years of age, was given 120 c.c. during an operation for an impacted urethral calculus, which lasted over an hour. What a list! Again and again the reporters say that there was no alarming symptom, or that there was not the least cause for alarm. In *Guy's Hospital Gazette,* April 11, 1903, one reads, "In the presence of grave hemorrhage the ideal anesthetic is A. C. E., or kelene followed by A. C. E."

Perhaps one of you will now be willing to let me use ethyl chloride for one of your cases. Maybe, it is an office case. An abscess is to be opened, or a vaginal examination is to be made under anesthesia. Of course it is best that the patient has not eaten just previously; yet if she has and vomiting does occur, it will probably be only slight and transient. Clarke (Brooklyn) says his patients have never vomited. Ware's hour at the Good Samaritan Dispensary, New York, is in the early afternoon, and he anesthetizes his patients as they come, even just from dinner. Perhaps the patient objects to lying down, or may be the operation is to be a tonsilotomy, or other throat operation, and the Rose position is not desired. You may have him anesthetized sitting in a chair, if you wish that position, and know that this is a common practice. But it will be prudent to have him on his back. A syncope is reported from Wolverhampton, when the patient sat up during an operation. McCardie[4] (Birmingham) and a French dentist has similar mishaps. It will be wisest to observe the ordinary precautions which are taken in any anesthesia.

One is now ready to chose an inhaler. But this is not such a simple matter, for there are many of them. It may be a plain gauze compress, costing next to nothing, or an elaborate so-called "minimum," which is sold for 120 M. It may be comparatively open, as Ware's model, or tightly closed, as the "cornet" used by Fromaget,[12] or the cornucopia described by the author in his paper, *The Actual Schleich Narcosis* (*Brooklyn Medical Journal,* June, 1899). Or it may be one less closed, as some form of the Clover[13] or Ormsby bag apparatus, or less open, as the Breversche Korb,[11] after whose design Kny-Scherer are making an American model. Between these extremes there are many others. The Schönemann, as well as the Seitz, universal masks; Brodtbeck's celluloid mask, with an iris diaphragm. Juilliard's large

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ether mask has been used. (Since this paper was written, I have seen Golden's apparatus. The ethyl chloride is confined on gauze in a chamber between valves, so that there is at once an open method of administration and an absolute prevention of waste.) For mixed anesthesias a serviceable form is this simple modification along well-known lines of the Allis inhaler (*Medical Record*, January 23, 1904).

The gauze compress and the towel cornucopia are simple and clean, and save the ethyl chloride; but they, as well as the English bag apparatus—with these would have to be included the several American models which are just as good—necessitate an essentially close method. The Brewer form is a good one, but the construction of the valves forbids cleansing and, besides, it is as yet a very expensive apparatus. The author prefers Ware's[14] mask, because it is simple and inexpensive, gives plenty of air and can be readily cleaned.

However, when the patient can bear a more concentrated vapor, the most brilliant results are obtained with a "close" mask. This is especially true in obstetrical work, when the patient must be eased quickly yet transiently. I have had great satisfaction on several occasions in noticing how promptly the pains were relieved, and how very wide awake the patients were during the intervals.

Of the half dozen preparations of the ethyl chloride which can be purchased, only two are as yet generally used. Probably unless the author specifies, that form known as kelene is always meant. Kelene is the trade name for the product of the Société Clinique des Usines du Rhône, whose New York representatives are Fries Brothers, 92 Reade Street. The monnet tube, in which it is put up, enables the anesthetist to follow easily Ware's direction to "spray intermittently." Dr. Henning, in Berlin, manufactures a most interesting product which is known as "aetherchloratus pro narkosi," or simply as Henning's ethyl chloride. Lehn & Fink, 120 William Street, New York City, can supply this, but as yet only in a container which cannot well be inverted. The small tubes which Henning makes, containing only 3 to 5 c.c., ought to be very handy for one who prefers the close method and mass doses. These others, antidolorin and anodynone, have been used so far as I can learn only by Cunniston, who reports favorably upon them in an excellent article in the *Boston Medical and Surgical Journal*, January, 1903. Clarke (Brooklyn) uses the

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Bengué product. Any pure ethyl chloride can be used. The author does not mean to say that only the two prominently mentioned are pure forms, but merely reports what he has noticed in his investigation, that they are universally considered to be the very best.

Ethyl chloride is decidedly pleasant; it is neither cold nor pungent, does not cause any choking or coughing, and only in a very large dose might it cause one to hold the breath. Sometimes if the gauze in the Ware mask is not thick enough, some of the spray will fall upon the face and cause the patient to shrink. But this is only a momentary unpleasantness and can be entirely avoided by care in preparing the mask. On the other hand, if the gauze is too thick, and the capillary opening in the tube large, then a hoar frost readily forms on the gauze and occludes the opening. In both such instances one must know how to adapt the spray to the thickness of the gauze diaphragm. If the gauze compress or the cornucopia is used, care must be exercised not to allow the fluid to touch the face. That it is comparatively harmless, however, the author knows, for he once sprayed a drop into his own eye without any injury resulting.

There are really only two methods of exhibiting ethyl chloride, and these differ only in this: that whereas Ware's apparatus allows the anesthetist to give it drop by drop, as it were, and thus suit the amount to the patient—to individualize the patient—all other forms are meant to receive a mass dose, on the assumption that 2½ c.c. is the smallest amount which will narcotize any one. Some operators give 5 c.c., or even up to 15 and 20 c.c. at once.[25] I cannot feel that this is a wise procedure. If one follows Ware's method he will probably find, unless he is unusually proficient, that he will take a longer time and use more of the anesthetic than when a close method is followed. But he may feel that he is working along more rational lines, and because he is better able to treat a patient's possibly greater susceptibility, he can give more accurate doses and will feel safer.

After a few inspirations the pulse rate may become somewhat heightened. Usually a rapid pulse continues such; a slow one may be accelerated. Many times there is no change whatever. It is thought by some that the acceleration is due to a too highly diluted vapor, and that the patient becomes nervous because he does not go under fast enough. The tinnitus aurium and sounds of whistling and hammering, which may be present at this early

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stage, might easily excite persons already apprehensive of danger. Or, again, a dose relatively too large, may send the pulse up. Dumont, in particular, calls attention to this. All observers agree with McCardie[4] that the pulse may be disregarded so long as the respirations remain full and strong.

Is there any arterial hypotension? H. C. Wood (University of Pennsylvania), in the 1892 *Dental Cosmos,* basing his opinion solely upon some animal experiments, said there is always a fall of the blood pressure due to a direct depression of the heart. But he used an admittedly concentrated and suffocating dose, and induced some of the anesthesies even by injecting the ethyl chloride directly into the jugular vein. König[15] records the same effect but does not consider it to be so marked, and ascribes it especially to a concentrated vapor; and even then he found it less true of the monkey than in dogs. Malherbe and Rubinovitch,[16] using the Potain sphygmomanometer on 24 human subjects, also sustain these findings: in 22 instances there was arterial depression, and the number of the heart beats increased apace with the lowered tension. Ruegg,[17] of Basle, maintains that a dilute vapor dilates the blood vessels, while a concentrated vapor contracts them and increases the heart's action. The weight of clinical observation is against these deductions, from animal experiments. The heart is not usually affected; if it is, the temporary change may be ascribed to the causes already mentioned, and quickly ceases when the anesthetic is stopped. Rose[18] (Bristol) did not find any variation worth recording in the four anesthesias to which a woman submitted whose heart sounds were obscured by a loud double mitral murmur. Bossart[8] (Aaran) reports three cases of compensated heart lesion, all acting favorably. Hacker (Innsbruck) says he had no bad results in a case of fatty degeneration. It is a common experience to begin with a pulse at 120—I had one at 132—and find no change during a short operation.

But the effect upon the respiration is more marked even from the beginning. There is no irregularity, but a deepening of the thoracic excursion, an augmentation of the force and usually some increase, a regular increase in the rapidity. But it does not become shallow or slow. Sometimes a soft snoring is observed. Several cases are reported of a temporary inhibition of the breathing. These may have been true apneic pauses, or have been due to atonic spasm of the chest muscles or of the diaphragm. They quickly passed away when the mask was removed. In the main.

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Nové-Josserand's[7] observation will hold true, that the respiration remains calm, regular, deep, sometimes a little stertorous, but is usually not greatly modified.

Especial attention must be directed to a frequently observed phenomenon. If the patient begins to snore, he is ready. This effect is so commonly produced that McCardie counts it as one of the cardinal signs of a fully established anesthesia. If, in addition to this, the muscles are relaxed and the conjunctional reflex is lost, while the pupil is moderately dilated and the eyeball is turned to one side, then it is only time lost to delay any longer.

Yet it is not necessary to wait for all of these signs. Sometimes there is not complete muscular relaxation, nor are the conjunctivæ always insensible. There may even be contracture of the muscles somewhat as in the cataleptic state. When this occurs, Seitz[19] (Constance) says it is a true second stage, and corresponds to that brief moment in an ether anesthesia which is called the *aetherrausch,* and, like that, can be utilized for a short operation. The patient is not really anesthetized, as we use the term, but he has been *analgesized,* if I may coin a word; he does not feel the pain, although he may resist the attempt to operate. I have had several cases which illustrate this. One was a simple perineorrhaphy. The patient consumed more kelene than I had expected, so that just as she was ready—cataleptic—the anesthetic tube was unfortunately emptied. I thought that the stitch could be taken anyway, but as she squirmed some when the needle touched her, it was thought best, under the circumstances, not to persist. I was greatly chagrined when she said a minute later that she had not felt any pain whatever. The other case was even more pronounced. Suffice it to say that an infected finger was opened while the man was struggling. When he regained consciousness he had no recollection of any pain. He said he felt that something was being done to his finger, but he did not know what.

It is a common practice to exhibit the ordinary dose (2½ to 5 c.c.) after a "close" method, and to operate after a few minutes, even if the patient seems to feel. If once the breathing has become rapid, especially if snoring in character, the pupil moderately dilated, and the patient has made purposeless movements, or has stiffened the whole or a part of his body, he is insensible to pain, and the short operations may be done in good conscience. One will find that in a complete anesthesia the muscles do relax sufficiently to permit operations in which this condition is

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required. A study of the operations already reported, laparatomies, amputations, the reduction of old dislocations and others, shows that such must be the case.

Yet sometimes the muscles will not relax sufficiently, or there is too pronounced a stage of excitement. Ware (New York) reports five per cent; Girard[20] (Toulon) six per cent. of failures. Reboul had to change the anesthetic in five instances. McCardie records some failures with the Brewer mask, but says that he is able to anesthetize any one, even an alcoholic, with the Ormsby inhaler.

Nervous patients usually make some erratic motions or cry out incoherently. Alcoholics are notoriously bad subjects for any anesthetic, and ethyl chloride is no exception. Yet it does seem that they struggle least when that is used, or even not at all, and they can be quieted absolutely if a preliminary hypodermic injection of morphine is given. Even if there has been excitement and struggling, they seldom are aware of it afterward as being caused by the anesthetic. They remember it as from a dream. Sometimes the dreams are very real. A patient of the author laughingly said he had imagined he was being assaulted by two robbers, and that his struggles were to free himself. This was a near approach to the nightmare of which some occasionally speak.

Much more usual is the experience of passing through pleasant scenes and enjoyable occasions. Girard tells of a young woman who both asked and answered questions during the course of the operation. Strangely, upon awakening, she recalled only a vivid dream of having been transported far away into and through deep woods and flower gardens. He also interestingly narrates his own experience. He dreamed that he was visiting again some Alpine mountains, and beheld a marvelously beautiful sky and sun. When he awoke after the short operation, he sat up on the table rubbing his hands, surprised at his position, and disbelieving that the operation had been done. He was able to get down without any assistance, had no unpleasant feelings except a pasty taste, and was able to direct the scheduled operation.

There would seem to be some reason for taking the precaution of having a third party present when anesthetizing women, for two anesthetists have already been accused of having made criminal assaults. It is not indeed very unusual, when the operation is upon or about the genitals, to notice that the dreams seem to be of an erotic nature. In a recent case the author observed an

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annoying priapism. A report is made of another such instance in which even the orgasm took place. These are comparatively rare observations to be sure, and are mentioned only that they may be expected.

Whatever the character of the unconscious or subconscious state, or however much the patients speak or move, one does not have to fear the rebuke not infrequently heard after a gas anesthesia, that the pain was all felt, but the power to manifest it was absent. Once under the anesthetic, the sense of pain has disappeared, though the tactile sense may remain. A curious fact is that this analgesia continues for some time after consciousness has returned; it may be even for ten and twenty minutes.[26]

The awakening is rapid, sometimes within a few seconds after the mask is removed, and generally, according to the quantity of the anesthetic inhaled. It is a return to full consciousness. The eye is wide open, the senses are active, there is neither dulness of hearing nor a dimmed vision; the aspect of the face does not indicate the presence of an anesthetic; there is no odor on the breath, perhaps a pasty taste which a swallow or gargle of water quickly removes; rarely a headache, and vomiting is less frequent than after either chloroform or ether. In dispensary practice the child begins to cry after a few breaths; a slight shake rouses it completely; the mother picks it up, and by the time it is dressed the mother can take it home.

An interesting and typical case which I saw at the Good Samaritan Dispensary (New York) a few days ago, was that of a middle-aged woman who had been anesthetized for about five minutes while an ugly mammary abscess was opened, cleaned and packed. She lay still for about a minute after the mask was removed, and then taking several long breaths, opened her eyes and was helped to sit up on the table. She looked about her in a puzzled sort of a way, then slid down from the table without any assistance, arranged her clothing and, after a few minutes, walked around to the surgeon showing and asking relief for the eroded nipple of the other breast. A similar course marked the completion of a minor operation at the Norwegian Hospital (Brooklyn) a short time ago. A few moments after the operation, the patient was out in the corridor drinking a glass of water.

This freedom from annoying after-effects is seen in most cases, but there are some patients who vomit. This seems to be a misadventure from which no anesthetic is entirely free. However,

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the vomiting is neither severe nor of long duration. Some observers have never seen it. In a personal communication from the Massachusetts General Hospital, Allen says he sees nausea and vomiting in many cases. Rose (Bristol) says in two per cent.; Bossart (Aaran), twelve per cent; Cunniston[21] (Boston), twenty per cent; Girard (Toulon), thirty-nine per cent. McCardie says it occurs more often with ethyl chloride than after nitrous oxide; less frequently than after the so-called "heavy" anesthetic agents. The amount of the anesthetic used is doubtless a determining factor.

This is also true of any effect upon the liver and kidneys. Gaudiani[2] found albumin after a long operation; Nové-Josserand[7] only when much ethyl chloride has been used. Reboul[9] did not find any albumin at all. Dumont[11] says König did not find any. Girard[20] and Malaherbe found both albumin and bile pigment. Seitz did not observe any adverse changes even in a patient with an amyloid kidney. Another author makes the sweeping assertion that neither dyspeptics, nor hepatitics, nor nephritics, are in any way injured by ethyl chloride.

The skin does not give many signs. Cyanosis is exceedingly rare, even with a "close" method, and depends entirely upon mechanical causes. There is no pallor; on the contrary the tendency is to a dilation of the superficial capillaries of the face and the upper trunk, so that a slight erythema is sometimes noticed, or even a pronounced rash. A warm moisture is frequently observed both during and after the anesthesia. This external vascular movement has led Girard to assume a similar determination of the blood to the brain and medulla. If this assumption can be established, it will give rise to a comforting optimism that the vital centers are in no danger from anemia.

But the effect of ethyl chloride upon the vital centers and brain is not yet unequivocally determined. However, a particular observation which is especially emphasized, is its evident and pronouncedly selective action upon the dissociating brain neuroglias, hence the early incoordination of both movement and perception. If now, according to Schleich's theory[22] of the varying degrees of resistance to any anesthetic of the several cortical layers, in accordance with which it is supposed that the neuroglia is least affected in the lower cerebral planes, and that the purely vegetative or automatic functions are governed by the lowest strata of the brain substance, then one would feel like believing that

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because ethyl chloride acts as rapidly upon the upper portions, it does not need to be pushed so far as to deeply affect the older and more resistant areas of the purely organic functions of the brain. Besides this, the motor ganglia of the cord seems to be peculiarly resistant, or may be even stimulated so that a more or less continued tonic spasm of the voluntary muscles is present to some degree all through the course of an operation.

In noting his observations of the effect of ethyl chloride upon the heart, Nové-Josserand is inclined to believe that some heart depression which was manifested, was due to vagal stimulation, for this, he says, ceased upon section of the vagus. Girard, on the other hand, after numerous experiments, is very emphatic in his opinion that the "moderate center is really inhibited," as it were, and adds: "We insist upon this important fact—a fact the value of which experience has proven—that a secondary cardiac syncope ought not to be feared in the course of an established anesthesia." Since Girard also denies any irritation of the trigeminus, it will be seen that also does not fear any reflex heart failure in the beginning of the anesthesia. Seitz, however, having seen some unpleasant interferences with the respiratory rhythm, is afraid that the sensory fibers of the trigeminus might be irritated enough to cause a glottic spasm, and that if there were any impairment of the common arteries, the resulting increase of the intrathoracic pressure might close them and cause death. He is the only one, by the way, who expresses this fear, and even then he limits his objections to the use of kelene. Henning's preparation he finds to be much less pungent and irritating. I must say that I cannot smell any difference; to me neither is in the least degree unpleasant.

So ethyl chloride may be dangerous. To be sure. It is only relatively safe. And yet, according to present statistics, is is the least dangerous[16] of all anesthetics, excepting only nitrous oxide. Most of the half dozen deaths which are reported, have been unjustly charged against it. Lotheissen[28] (Innsbruck) has looked into all the records and has this to say: "The anesthetic in Soulier's case was not ethyl chloride (C_2H_5Cl) at all, but ethyliden chloride ($C_2H_4Cl_2$). Zeitz (Zürich), death occurred sixteen hours after local use. In another instance, ether for forty-nine minutes followed a one-minute exhibition of ethyl chloride. McCardie's (Birmingham) case was that of a very debilitated patient, who died an hour and a quarter after regaining consciousness.

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The autopsy showed nephritis, chronic adhesive peritonitis, pleuritis, and a fatty liver. Surely a bad case for any anesthetic. Bossart's case also was contraindicated for general anesthesia. A tracheotomy was to be done upon a cyanosed child to relieve the dyspnœa caused by laryngeal diphtheria. Latheissen's own case in 1901 was an alcoholic, forty-one years of age, who died within three minutes after the anesthetic was begun, and after only about 5 c.c. had been sprayed into the Brewer mask. The case has been widely discussed. The necropsy revealed fatty degeneration of the heart and marked coronal sclerosis.

The December, 1903, *American Journal of the Medical Sciences* reports a death at the University of Pennsylvania Hospital. The man did not die from the effect of the anesthetic. He vomited an enormous quantity of an almost clear watery liquid for about three minutes, without any retching or inspiratory effort. When vomiting finally stopped, he was dead. Lotheissen's death was probably due to an initial irritation of the trigeminal fibers, and in McCardie's case the anesthetic, if not the sole cause, was yet a factor. Since at least 25,000 anesthesias have been given—30,000 is more likely—this surely is not a disquieting statistic.

Some dangerous minor symptoms have been reported, but these were clearly due to an accidental overdose (Bossart's case), or the outcome of neglected attention to a retroplaced tongue, or a disregard of sufficient admixture of air" (Ware's[24] cases).

And now, in closing, a few cautions, a consideration of suggested contraindications, and a recapitulation of the course of the narcosis.

The ethyl chloride must be chemically pure. The mask must fit the face snugly. As little as possible should be given—a half a dram is a good initial mass dose. Mauratta[25] gave up to three and four drams without ill effect, but the general opinion is against such practice. A graduated container must be employed, else the dosage is uncertain. Other rules every anesthetist knows: to watch the eyes, respiration, and pulse; to insist upon quiet in and about the anesthetizing room, and to avoid an open flame.[21]

Only two contraindications have been suggested. If the laryngeal aperture is abnormally small, lest it be aggravated to a stenosis by an irritating vapor. If any kidney disease is present. But Girard alone suggests this danger. It is not commonly held that the kidney suffers any harm.

Ethyl chloride is a safe, pleasant, rapid systemic anesthetic

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agent. This preanesthetic or short analgesic stage continues for only a fraction of a minute, and is followed by a condition characterized by some tonic contractures, accelerated respiration, and usually a moderate degree of mydriasis. This is called the cataleptic stage by some, the stage of contracture, or the stage of analgesia by others, and is suitable for short operations. After 2 to 5 c.c. have been inhaled, or more in the case of large adults, usually after fifteen to sixty seconds, or sooner in children, the third stage, that of profound anesthesia supervenes. The muscles are now relaxed, the breathing is deep and rhythmical, perhaps snoring; usually the pupil continues to be somewhat dilated, and the conjunctival reflex is abolished. In some instances the patient passes at once into the third stage; sometimes it takes five minutes; once in a while the third stage is not reached at all.

The Lancet, April 4, 1903, contains the following instructive table from the General Hospital, Birmingham. Single dose, 3 to 8 c.c. Ormsby's inhaler:

77 dental cases.		197 adenoid or tonsil cases.
50.9 sec.	Average duration of induction.	51.9 sec.
2½ min:	Longest case of induction.	2 1-6 min:
20 sec.	Shortest case of induction.	15 sec.
71.3 sec.	Average duration of anesthesia.	64.64 sec.
2½ min:	Longest case of anesthesia.	2½ min:
30 sec.	Shortest case of anesthesia.	20 sec.

Average duration of the 274 anesthesias was 67.97 seconds.

If the ethyl chloride is to be continued, small doses, say 1 c.c., are given about every minute, or if a mixed anesthesia is to be used the change can readily be made. The patient is awake within a few minutes after the mask is removed. After a short anesthesia he is seldom nauseated, and rarely complains of a headache. He may be a trifle upset by his strange position and surroundings, but he will quickly recover himself. If it was a long operation and he is taken to the ward, he soon will be as natural as the other patients. If it was a short operation, say in the office, he will not be delayed long from going about his business.

To one desirous of considering this subject in greater detail, the author commends Ware's several papers, McCardie's excel-

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lent article, Cunniston's comprehensive essay, Girard's detailed description, and the chapters on ethyl chloride in both Dumont's and Seitz's excellent books on anesthesia.

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THE TREATMENT OF FRACTURES.

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In the rapid progress of surgery, and in the fascination presented by the new discoveries which have developed during the Listerian epoch, the treatment of fractures has received but meagre consideration. While the rules are well defined and elaborated, the practical points in technique are but sparingly pre-

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sented in surgical text books. The treatment of fractures requires, besides knowledge and experience, a peculiar talent which is found in the general practitioner as well as the surgeon. This talent is made up of mechanical instinct, patience, perseverance, and a disposition to be satisfied with nothing but the best.

In the treatment of a fracture it should be borne in mind that we are dealing with a wound, a lacerated wound of bone, which in its pathology and treatment is amenable to the same laws which govern wounds in other tissues. A fracture is necessarily associated with rupture and injury of blood and lymphatic channels, not only in the bone itself but also in the periosteum and surrounding soft tissues. In the case of fractures of long bones this injury to the vessels of the soft tissues is very considerable. Blood and lymph escape from the torn vessels, and exudation of serum and leucocytes takes place through the walls. This exudation occurs from vessels (1) which have been directly injured by the fracturing force, (2) which have been irritated by fragments of bone, (3) which have been injured by stretching or distortion, (4) which have been irritated by the fluid poured out of the injured vessels, or (5) which have become dilated through local vaso-motor paralysis from injury to their nerves. From these damaged vessels there at once begins an exudation of serum and blood cells, and the surrounding tissues become infiltrated with the products of this traumatic inflammation. The conditions here are comparable to those of a wound of the soft parts; and here, too, will the healing be influenced by the absence or presence of infection, by the niceness of the reposition of the wound surfaces, by the perfection of the immobilization of the wound, and by the nutrition of the parts.

This exudate undergoes the changes of wound exudate. The fluid is absorbed, and the new round connective tissue cells become converted into spindle cells, which form a network with the shreds of fibrin. The exudation involves, in a greater or lesser degree, the surrounding muscles, nerves and vessel walls. The exudate immediately about the bone ends is so prolific that when its fluid has been absorbed, and the new connective tissue has contracted down, it forms a firm mass of scar tissue, which becomes infiltrated with osteoblasts and converted into bone.

These conditions require to be treated the same as in any other wound. In simple fractures the asepsis of the wound is already secured. We have, therefore, to look to the next important steps

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in wound treatment—coaptation, immobilization, and protection. That means, in the parlance of fractures, correction of displacement, fixation, and protection from mechanical disturbances. The surgeon has to consider in this treatment not only the wound of the bone but also the lesions of the soft tissues.

While the expedients for facilitating diagnosis are not a part of this discussion, a plea for more accurate diagnosis is urged. The surgeon should have before his eye a picture of the bony wound. This is the first step in the treatment. There is nothing that will contribute more to his peace of mind than to have a positive conception of just what he is treating. Time and pains in making a satisfactory diagnosis are well spent. The value of comparison of the injured limb with the sound limb cannot be emphasized too strongly. The X-ray has become an indispensable adjunct.

It may be laid down as a general rule that the reduction and immobilization of a fracture should be done at once. Delay increases the infiltration of the surrounding tissues and adds to the spasticity of the muscles. The correcting force should be applied gently, firmly, and gradually increasing until the desired result is secured; not quickly and abruptly.

Here the personality of the surgeon is displayed. Gentleness with firmness, and tenderness, that will be satisfied with nothing short of normal apposition, are the qualities that make for the best results. It is always on the side of wisdom to have an assistant. This is particularly the case in the fractures of the lower extremity, in which the assistant can make counter extension and render assistance in supporting the limb.

General anesthesia is too little employed. It is of aid in diagnosis and in the reduction of deformity by overcoming two chief obstacles, muscular contraction and pain. Judgment is required in the determining of the advisability of its employment. The writer has seen it neglected when it was eminently indicated; and he has seen it used when it could add nothing further to the diagnosis, when not at all called for in the treatment, and when it did nothing but add to the general confusion and exaggerate the importance of the injury.

Ordinarily the reduction of a fracture is simple and satisfactory, but there are certain obstacles which may intervene. The muscular contraction may be so strong that it resists the combined efforts of both surgeon and assistant. A second obstacle is great

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pain. The anesthetic overcomes both of these. The splint material should be at hand to apply while the patient is still relaxed. Tenotomy and the subcutaneous division of muscle are necessary only when muscle or nerve are irritated by displaced fragment of bone or other irritating material. Normally the muscles lying along the bone are long enough to permit of the reduction of any fracture. It is irritation which causes them to contract, and prevents reduction. When the fracture has been perfectly reduced this irritation is overcome, so far as the bone fragments go, but is continued by the presence of the blood and exudate, and is necessarily present in a greater or lesser degree. There are many expedients for rendering the muscles less irritable. Among these may be mentioned the administration of sedative drugs. Compression of the artery supplying the limb will often cause the muscles to relax. The same principle of producing anemia by the Esmarch bandage may be employed. The injection or the infiltration with cocaine of the nerve trunk supplying the contracted muscles is often of value. Stimpson's method of tiring out contracted muscles by making continuous extension against them cannot be recommended. Immediate and complete reduction is the thing. To apply continuous extension to the fragments of the femur, with the expectation that in a few hours the muscular resistance will be overcome, is usually encouraging a false hope. The surgeon should not rest until the reduction is effected. My experience has shown that if a given weight does not correct the deformity in a few minutes, it never will. Every minute's delay with the displacement uncorrected is adding to the infiltration of the muscles and decreasing their elasticity.

An important obstacle to reduction, which is often mistaken for muscular resistance, is the interposition between the bone fragments of muscle, clot, periosteal tissue, fascia, or loose fragments of bone. I have seen forty pounds of extension applied to a fractured femur, and the overriding and displacement not perceptibly influenced, because of the interposition of a bundle of muscular tissue between the fragments. When a satisfactory reduction cannot be effected because of these things, the best surgery demands the operative exposure of the fracture and the removal of the hindrance to reduction. It may be borne in mind, however, that if no infection is present, or the fracture is a simple one, none of these obstacles, although they will retard it, will actually prevent the osseous union of the fragments, for they are

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all capable of being incorporated in the callus, and infiltrated with bone tissue. One of their objections is that they render immobilization more difficult, and thus conduce to non-bony union.

The following proposition cannot be too strongly emphasized: The reduction and immobilization of fractures should be attempted as soon as possible after the accident. Time should not be wasted with the vaunted fomentations and lead and opium waters. If a fracture with overlapping has been allowed to go uncorrected, the infiltration with exudate of the surrounding tissues so rapidly destroys their elasticity that reduction without operation may soon become impossible, nor may the surgeon expect to overcome the resistance by general anesthesia. Finally, the more motion and distortion that takes place before final immobilization is applied, the greater will be these difficulties. Herein lies a plea for the gentle handling of fractures.

Before proceeding further with the treatment of a fracture the condition of the skin should be looked to. Serous blebs should be snipped with scissors at the most dependent part, and their fluid evacuated. The overlying skin need not be removed, but should be covered with a bland antiseptic powder or ointment on a few flat layers of dry gauze. Excoriations should be covered in the same way.

When a limb can be washed without disturbing the fracture the skin should be cleansed. This operation cannot be recommended in all fractures because of the mobility between the fragments which it entails. However, in cases of fracture of one of two parallel bones, or in cases of limbs where the skin is particularly unclean, or in the presence of threatening perforation of the skin, it is indicated. The surface should be examined for prominent points of bone which might penetrate and render the fracture compound. If such a point is discovered, further manipulation should be resorted to with the view of securing a more perfect reduction. This condition is not infrequently observed in fractures of bone covered only by skin, such as the anterior border of the tibia. When a perfectly satisfactory result cannot be effected, the danger of penetration of the skin may be lessened by applying a compressing pad of gauze. Care should be taken that the compression is not made on the threatening point, but above or below, over the bone with which it is connected.

In the application of plaster-of-Paris dressings the following practical suggestions are offered: The dressing of a fracture of a

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lower extremity should never be attempted on a soft bed. The best bed for this purpose is one that is narrow and having a thin mattress resting on boards instead of springs. The patient should lie recumbent and relaxed, and not be permitted to watch the operation. There is a very prevalent notion that a plaster cast should not be applied to a fractured limb until the subsidence of the traumatic swelling. As a matter of fact this swelling is largely due to imperfect immobilization, and will stop as soon as the limb is properly encased in a plaster dressing. I have no hesitancy in applying a plaster bandage to a fracture of both bones of the leg immediately after the accident and before any swelling has developed. If the fracture of the tibia is an oblique one there will be overriding. This is overcome by the assistant who makes traction, while another assistant stands opposite, supports the leg, and rubs smooth the bandage. The foot, at a right angle, and the bony prominences of the knee furnish the two points of purchase which hold the leg in traction against the muscles after the plaster has hardened. By the time the last bandage is applied the cast should be firm enough to support the leg. This is the ideal dressing for this fracture.

If the person applying a plaster dressing is skilled in its use the best covering for the leg is a seamless white cotton stocking; for the arm, the sleeve of a cotton undershirt; or for either, the elastic tubular jersey sleeving. In the application of this bandage to the leg a four-inch plaster bandage should be started first about the site of fracture. It is a disadvantage and a common error to begin the bandage at some other place, or to use a narrower bandage. The most important point in the application of this bandage is that it should lie perfectly flat, free from wrinkles, each turn applied with the same degree of pressure, and neither edge of the bandage tighter than the other. When a point is reached in applying this bandage where a reverse would naturally be made, a more satisfactory result will be secured if, instead of making the reverse, the bandage is cut at this point and a new start is made. If this practice is followed throughout the application of the bandage, a dressing free from folds is secured. A wide bandage also should be carried over the knee. A narrower bandage is now used. This envelops the foot, ankle, and rest of the leg. For the outer bandage to fulfill the best aesthetic indications, a selvage bandage, not wider than two inches, is to be preferred. In the application of this also, the above mentioned

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method of dividing the bandage instead of making reverses should be followed. When no extension is required, the assistant, who supports the limb, grasps the free end of the toe of the stocking or the redundant portion of tricot tubing, which extends beyond the toes, while with the flat of the other hand he supports the site of fracture. The bandage is strengthened, and a smaller amount of material required, if a few longitudinal strips or very obliquely applied spirals are incorporated, and each layer well rubbed in by the moistened hand. When desired, such a dressing may be materially strengthened by incorporating a few strips of paper, thin wood shavings, or perforated strips of thin metal.

The poorest plaster bandages to which we have access are the bandages of the shops. These are made of crinoline, which are rich in stiffening made of starch or glue. The best bandages are those which the surgeon can make himself. The materials for these bandages should be made of crinoline which has been washed to remove the stiffening, dried and cut into desired widths and lengths. Into the meshes of this is rubbed dehydrated, dental plaster-of-Paris, and the bandage loosely rolled. To hasten hardening of these bandages they should be used in hot water containing about half an ounce of table salt to the quart.

While it is impossible to lay down rules, most plaster casts applied outside of hospitals are from two to four times as thick as necessary.

When it is desired to cut a fenestrum for the exposure of a wound, it is recommended to cover the wound with several thicknesses of small gauze squares, but slightly larger than the wound, and a larger square of oiled silk. The plaster dressing is then applied over a smooth surface, there being practically no dressing on the wound, and immediately, while the plaster is still wet, a fenestrum is cut with a sharp scalpel. An ordinary knife will not answer. A good plaster dressing under these circumstances cuts almost as easily and smoothly as cheese. The cut edges are smoothed, the oiled silk turned over them, the gauze removed, and the wound treated with a proper surgical dressing. When large fenestra are to be cut the cast may be strengthened by the methods mentioned above. By incorporating two strips of iron, I have been able to cut away the entire circumference of the cast excepting the width of the iron strips. The best materials for rendering a plaster splint waterproof are copal varnish or water glass. This is often indicated in the cases of young children. The important

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thing is that the inside of a plaster cast shall be free from irregularities and that the pressure that it makes shall be smooth and even. I have frequently examined the inside of plaster casts after their removal, and the unevenness and ridges which have been observed were not the cause of trouble for reasons which bore testimony to the great vitality of the tissues.

After the application of any permanent splint the patient should have a feeling of comfort in the limb. If there is persistent pain he should not be encouraged to believe that it will subside, but the surgeon should know that there is something wrong, and the cause of the pain should be sought. Usually, if it has to do with the splint, it will be found that the injury of the bone and soft tissues is responsible. Pressure upon a nerve by a fragment of bone is a common cause of persistent pain. If this cannot be removed by manipulation to effect better reposition, it should be exposed by operation and corrected. Much has been said against the use of plaster, but most of the words that have been uttered have testified to the lack of skill in its use. In unskilled hands it is capable of much harm.

When a lighter dressing will answer we may use crinoline or the ordinary gauze bandage, impregnated with silicate of soda or stiffened with starch paste. Or the silicate of soda may be used in solution in the form of water glass. Either of these materials lend themselves to the making of bandages, and are too little known and employed.

A plaster cast or splint of the above materials may be cut down either on both sides of the limb, or in front and behind, and converted into a removable splint. Such a splint is indicated when it is desirable occasionally to inspect the limb. The splint may be cut when it is still wet, the edges smoothed down, and, after it has sufficiently hardened, the two halves removed. If a narrow strip is cut from between those two halves it will be found that the splint will fit more snugly and will not be too large when the usual atrophy of the limb takes place. I have sometimes finished the edges of these splints by binding them with a narrow strip of the same material. These halves are easily removed and reapplied, being held in place by a few turns of bandage.

When the tendency to overriding persists, in the case of the femur and in oblique fractures of the shaft of the humerus, and of the two leg bones, continuous extension becomes necessary. The best material for the side straps is adhesive "mole-skin." In

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the treatment of fracture of the thigh this adhesive material is usually made too narrow. A good plan is to use a strip about five inches wide, which is cut into obliquely in such a manner as to give the effect of a series of straps diverging from a central strip. One of these on either side of the leg should extend fully as high as the fracture, and should be folded under and leave the skin at the middle of the leg. Or each strip may be divided into three longitudinal strips, the middle one of which is applied parallel with the leg and the two others obliquely. The side strips having been applied and retained by a flannel bandage, the weight and pulley apparatus should be adjusted, and weight added before splints are applied. If the soft structures are not too thick, the fragments can be felt to slide into place, and weight should be added until satisfactory position is secured. In the adult this requires from fifteen to forty pounds, and in the child of ten years from ten to twenty-five pounds. A common error is the employment of too little weight. The time to apply the maximum weight is immediately. An additional five pounds on the first day will do what ten pounds will fail to do five days later. I have seen the attendant measure the limbs and order five pounds more weight, repeating this two or three days later, and still again until ten or twenty days had elapsed before the last addition of weight was made. This it not good surgery. It should always be borne in mind that the thigh bone has a natural curve with the convexity forward, which in some individuals is pronounced.

The general principles in the comparative measuring of limbs are well known. There is one point to be called attention to: it is better to measure by the sense of sight than by feeling. To hold the end of a tape measure in one hand and apply it to the anterior superior spine of the ilium while the other hand applies it to the inner malleolus, is to invite inaccuracy. The blunting of the tactile sense by having the measure between the finger and the point sought for, and the skin over these two points moving about so easily, contribute to error. Moreover, however honest the surgeon may be, when the first limb is measured, the human mind is not capable of being uninfluenced by this measurement in measuring the second limb. This invites inaccuracy of which the mind is unconscious. The impartial and scientific way to make this measurement is to seek out with the fingers a certain point of the anterior spine, say the most anterior or the most superior, and mark the skin directly over this point with ink or pencil. The

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same thing is done systematically and carefully on the other side. This operation is repeated over the malleoli. When the tape is applied the surgeon does not again use the sense of feeling, but measures between these two points by the aid of sight alone. If he pleases a line may be held connecting the two anterior superior spine marks, and the middle of this line used for the upper fixed point.

The use of the Thomas knee splint and of the Thomas hip splint in the treatment of fractures of the lower extremity I regard as a valuable adjunct to the therapeutics of these lesions. They are indicated in cases in which it is desirable or imperative that the patient should be up and about or not treated in the recumbent position. The ambulant treatment of fractures was discussed by myself in papers published in 1898.

When adhesive strips are applied to the skin to retain splints, the best results will be secured if the precaution is taken to have them not encircle the limb, but applied obliquely or stopped short of a complete circle.

In the treatment of the fractures of the thigh in children, I wish to bear testimony to the value of perpendicular extension of the leg, and to the double Hamilton splint in very young children. Vertical extension is particularly valuable in fractures in the upper part of the shaft. In fractures of the thigh in the new-born, I have used with satisfaction a method originally suggested to me by Dr. G. R. Fowler, consisting in strongly flexing the thigh upon the child's abdomen and holding it there, splinted to the body, by an adhesive strap and band.

Various expedients contributing to the comfort of these patients are a part of the store of information of the general practitioner. Fastening the weight-pulley to the wood-work of the wall when the position or construction of the bed renders it necessary or expedient, may be resorted to. In fracture of the humerus, the use of a weight, to be hitched to the arm when the patient is up, and a pulley extension with the same weight when lying in bed, is well known.

In some fractures, despite the best efforts, the fragments cannot be brought into satisfactory apposition. When all other resources have failed, the well-equipped surgeon is always justified in exposing the fracture and applying such local treatment as the condition requires. The incision of operation often liberates an amount of blood and serum, the presence of which has been an

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obstacle to reduction. The removal of soft tissue which has fallen between the bone ends can then be accomplished. Often nothing further is required. When the surgeon feels that neither splints nor extension will hold the fragment in place he should proceed to the direct fixation of the bone ends.

In dealing with comminuted fractures, with irreducible displacement, after extension, manipulation, anesthesia, and tenotomy have failed, the same general principles as before stated apply. Here the surgeon often has to do with loose fragments of bone which have become entirely separated and often so displaced as to form the chief impediment to reduction. Such fragments may either be replaced, or, if not too large, removed.

The involvement of a joint by a fracture adds another element of importance. Here there is an effusion of blood and serum into the joint, and the traumatic exudate about the line of the fracture causes the formation of plastic exudate upon the synovial surface. If the joint is kept immobilized too long, the plastic material becomes adherent to the opposite bone surface, and the presence of serum may add to the amount of deposited material. The amount of this material is dependent upon the traumatism, or, in other words, upon the degree of separation and mobility of the fragments. Motion of the joint immediately after the injury increases the amount of exudate and effusion. The guiding principle, therefore, in the treatment of such fractures, is immediate and the most perfect obtainable immobilization. This should be continued until the traumatic reaction has subsided, and careful passive motion should be instituted as soon as is consistent with the measures applied for the immobilization of the bone fragments. The immediate application of cold will inhibit the effusion. After twenty-four or forty-eight hours, pressure by flannel bandage will often hasten absorption, and at the end of two or three weeks' massage, heat and pressure may be used. More harm is usually done by anxiety to secure firm bony union than by the too early employment of passive motion. In the first case ankylosis often results; in the latter case, if the motion is made gently and through a very small arc, the union of the fracture need not be injured. This is not only so in fractures involving joints, but also applies to fractures in the neighborhood of joints. I know of no fracture which is so universally over-treated by immobilization as the typical fracture of the lower end of the radius. When any splint at all is required, it should be left on only long enough for the fragments

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to become agglutenated, and motion of the tendons of the forearm should be continued after the first few days. If necessary the splint may be left on to protect the fracture, but the fingers should be left free to move. The thing to be guarded against here are adhesions of the tendons to their sheaths. This is particularly prone to occur in persons of advanced age or rheumatic tendency.

In the treatment of compound fractures modern surgery has made advances which are not exceeded in any other branch of surgery. In modern hospital treatment it has attained to a nearly perfect state. In the general practice outside of the hospital there yet remains much to be desired. This is not altogether for reasons reflecting upon the general practitioner. In the city within the precinct of a well-equipped hospital, the ordinary ambulance case of compound fracture enjoys the best possible chances that surgery has to offer.

In the treatment of this condition the first thing which the surgeon should have in mind is the wound, and the securing of its primary healing. With successful attention directed to this end, the fracture is quickly converted into a simple one. The fate of a compound fracture is largely decided by the first dressing. The surgeon may never hope by scrupulous later attention to atone for laches committed at this first dressing. In a general way we may lay down the following rules of treatment: When a compound fracture is first seen an attempt at diagnosis and treatment should not be made. The wound should be covered by a copious protective, preferably a wet antiseptic dressing, any extreme deformity corrected, temporary immobilization effected, and then carried to a place for dressing. If considerable time must elapse before the wound can be properly dressed, if in the correction of the deformity, or for any other reason, more foreign material will be worked into the wound, it should be irrigated before applying the provisional protective. The best place in the world for the dressing to be completed is in the operating room of an hospital; about the worst place is the patient's bedroom. Here the fate of the limb is decided. In a fracture with considerable mobility of the parts, or laceration of tissue, a general anesthetic should be given. It is as important here as in the operation of laparotomy that the patient should be surrounded by the most scrupulous attention to modern surgical details in all that that implies. This having been provided for, the skin should be thor-

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oughly scrubbed with warm water and soap for a radius of at least a foot from the wound. This scrubbing should involve every bit of skin, including wound edge. Soap suds will not hurt the wound. While the scrubbing is in progress, to keep the suds washed out, a stream of antiseptic solution is played upon the wound, or a small bichloride sponge held over it. The same skin is then washed with ether, alcohol, or other fat-dissolving fluid, and finally with antiseptic solution. I desire particularly to state that outside of the hospital it is this cleansing that is usually defective.

After this, in the case of a small wound with but slight injuries to the soft tissues, the simple application of a wet antiseptic dressing of gauze, with immobilization, suffices. The small amount of discharge is provided for by the gauze, the wound becomes occluded by scab, and the fracture converted into a simple one. In no case should the wound of a compound fracture be sealed hermetically. In the case of a larger wound, with multiple fractures or laceration of soft tissue, or irreducible displacement, or the presence of foreign matter, the surgeon should freely enlarge the wound, or make such new wounds as shall give the best access for the treatment of these conditions. He should have in mind always the restoration of the parts as nearly as possible to their normal conditions. Fragments of bone, completely separated from their vital connections, should be removed unless of such size that their removal will shorten the limb beyond the point of usefulness. Under such circumstances they should be left with the hope that they may be free from infection. Bleeding vessels should be ligated, torn periosteum restored, divided nerves, muscles and tendons sutured. Drainage should be provided in the most dependent parts, and the rest of the wound closed. No dressing is better than gauze wet with 1-2000 bichloride solution. The most complete immobilization should be instituted, and the general comfort and quiet of the patient looked to. The elevation of temperature, following the absorption of blood products, should not mislead the surgeon. The drainage tubes should be removed as soon as possible. Usually all drainage can be dispensed with by the end of the first week. The escape of serous discharges from the tube is not an indication that drainage is necessary. Usually the tubes have outlived their usefulness by the end of the third day. The sooner and more complete the immobilization of the bones the less will be the discharge. For this

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reason, if the limb can be put up in plaster, at the first or second dressing, with large fenestra, it will be found that the serous discharge is less than when the immobilizing splints have to be removed at each dressing.

Every one who has had experience in this line of surgery has seen in what extreme degrees of laceration the tissues can be restored into place, and limbs saved, which at first sight seemed hopelessly lost. Even yet, however, the pessimistic impression of these wounds is responsible for the sacrifice of limbs. Here my observation leads me to believe that the hospital is not free from culpability. House surgeons should not be more appealed to by the prospect of a nice, well-rounded stump than by the prospect of a tedious series of dressings of a compound fracture. There is never an immediate necessity for amputation in a compound fracture in which there is a possibility, that the limb may be saved. It is better to wait until the signs of gangrene have appeared than to amputate a limb which would not have become gangrenous.

The conditions arising in a compound fracture which justify amputation are, injury of the blood vessels, so great as to cause the death of the part; uncontrollable infection which is leading to a serious toxemia; and irreparable and wide loss of bone substance, so great as to render the limb useless. The operations of bone transplanting and grafting are overcoming this last condition.

In the treatment of fractures, unsatisfactory results still occur in the hands of the most careful and experienced. Without entering into a general discussion of this subject, we may say that usually two things contribute to this end, the first is a too great deference to the whims and present comports of the patient; the second is a division of responsibilities on the part of the two or more surgeons in attendance upon the case. In a young or healthy person, the integrity of whose limbs is a matter of importance, the surgeon should have as his prime object the securing of a perfect mechanical result, and the opinions and pleasure, and indeed the personal comforts of the patient should all give way to this end. When the surgeon is called to put up a fracture for another physician, and after that never sees the case again but leaves the further treatment to some one less competent than himself, or when circumstances are such that the case comes successively under the care of two or three different surgeons, then the condi-

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tions are ripe for poor results and incriminations. One person and one alone should be held responsible by the patient, and this one should hold himself responsible, and should recognize no division of responsibility. He should have the full treatment in his hands. He may call in as much help and have as much counsel as he pleases, but he should either retain the full responsibility or defer to some one else. I have seen nothing but harm come from the violation of this rule.

In the case of old or infirm persons the fracture must be lost sight of. The general condition of the patient must take precedence, even at the expense of imperfect union.

The general principles in the treatment of delayed union and vicious union are too well known to need discussion.

As a final practical suggestion, attention is called to the apparent persistance of callus. When immobilization is imperfect an enlarged callus naturally develops. Otherwise persistent swelling should suggest overriding or osteo-sarcoma.

The modern treatment of wounds and the more exact methods of diagnosis entitle the patient to demand better results in the treatment of fractures than ever before. The surgeon is not to be satisfied with a poor result. He is now in a position to secure perfect apposition in fractures.

Notwithstanding the boldness which has characterized the surgery of the abdomen and brain, there is still a tendency to cling to the traditions in the treatment of fractures. This should not be so. The patient suffering with a fracture which is complicated by irreducible displacement or pressure, or injury to a nerve-trunk, should not be deprived of the advantage which surgery now can offer him.

THE CAUSES OF FEMORAL PHLEBITIS.

BY CHARLES H. GOODRICH, M.D.,

Brooklyn, N. Y.

When we consider the comparative infrequency of phlebitis or thrombo-phlebitis of the femoral vein and its tributaries, its position in our pathology may not seem of great importance, but if we contrast with this the occasional discouraging surprise

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with which it strikes the physician or surgeon, the severe pain, protracted discomfort, and disability suffered by the patient, and the possibility of tragedy where all seemed hopeful before its inception, its importance expands. Add to this the fact that all writers agree as to the relative obscurity of its etiology, that no methods of treatment have been generally acceptable and satisfactory, and we find an interesting field for study.

The causes of femoral phlebitis should be divided into two parts, part first dealing with general causes of phlebitis; part second with causes specific.

That thrombosis of the veins without inflammation may occur without bacterial complicity is readily granted. Phlebitis, or thrombo-phlebitis, on the contrary, has of late years been more frequently considered as associated with, and to some extent, caused by microbic activity. None will dispute the bacterial origin of suppurative phlebitis, that variety starting from close proximity to an infected wound or abscess and leading in many cases to pyaemia, or, in cases where such an inflammation is a secondary feature of pyaemia or septicaemia.

Regarding the so-called—and badly called—"simple" phlebitis, however, divers arguments have been offered pro and con, but the literature of the last decade offers so many pro-bacterial opinions reinforced by bacteriologic reports, that our faith in the occurrence of non-infective phlebitis must almost, if not quite, perish. Vaquez and Widal were the leaders in indicating the infectious nature of phlebitis. Laveran found streptococci in the blood of a fatal case of epidemic influenza with femoral thrombo-phlebitis. Haushalter and Inervain found typhoid bacilli and common colon rods in the venous walls and in the thrombi of typhoid cases, and *only* in the thrombosed portions of the vessels. Inervain found bacilli in the pus of an abscess surrounding the popliteal artery and vein. Tubercule bacilli in cases complicating phthisis have been demonstrated. In puerperal phlebitis, streptococci and other pyogenic bacteria have indicated the microbic origin of the condition. Even in cases complicating cachetic diseases, as carcinoma and leucocythenia, bacilli have presented themselves in the inflammatory products and in the walls of the veins.

Still there remain men of large experience, careful observers, who profess to be skeptical regarding the infectious nature of at least certain forms of so-called "simple phlebitis." In 1845,

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there occurred a learned discussion in the Obstetric Society of London where the weight of opinion was against the septic causation of phlegmasia, postpuerperal, notwithstanding the vigorous presentation of Widal's experiment and observations. Clark, of Philadelphia, excepts the cases following abdominal section and has constructed an ingenious theory to substantiate his belief. This will be taken up at length later in our paper. Dodwell regards the phlebitis complicating phthisis as primarily a thrombosis, the phlebitis being secondary and incidental to the general infection of the body common to the late stages of tubercular disease. Some regard the chlorotic cases as non-infective.

The writers, however, claim that we are justified in considering that all cases are caused, at least in part, by bacteria when we recall—

1st—The bacteriologic reports from many sources.

2d—The type of the fever.

3d—The effect on the general circulation, far more profound than the mere obstruction would impose. Further ground for this position will be found when we take up the consideration of the specific causes of this malady.

General causes (other than microbic):

1—Slowing of the blood-current may be a factor in causing phlebitis, especially as exemplified in the case of low fevers, endocarditis, cachectic conditions, and in persons long confined in bed from any cause. Furthermore, I would suggest the influence on the speed of the blood exerted by prolonged anaesthesia or by true surgical shock.

Yet the proportion of cases of phlebitis where this causative factor could be even suspected is hardly more than a majority, and a considerable percentage occur when the circulation has seemed satisfactory. Virchow held for many years that all cases were caused by lowering the blood-pressure, and disposed of them under the caption of "marautic-thrombi."

2—Allied to this first cause is the *Flexion of Joints.* We find that the majority of all cases of phlebitis occur primarily in (a) the femoral just below Poupart's ligament; (b) in the popliteal vein behind the knee; (c) in the basilic vein. Thus we may assume that a large vein is predisposed to inflammation, when it is so situated as to be often compressed by the naturally frequent flexion of a joint, this pressure retarding the blood-current.

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3—Fixations of venous walls to facial layers or to periosteum may play important parts in pre-disposing to thrombo-phlebitis.

4—The presence of numerous valves of the veins have been given credit for a minor influence. Both of these conditions may form reasons why inflammations of the common femoral, its tributaries and its continuations, the external and common iliacs, are more frequent than any other phlebitis.

5—Von Recklinghausen has held that the slowing and irregularity of the blood-current does not so much pre-dispose to thrombosis as the *whirlpool or eddying movement* which must take place in the blood where one current is injected into another at right angles, or against the stream, slowing the periphery of the blood.

6—Varicose veins, with their relaxed walls and diminished blood pressure, are favorable sites and evident causes of inflammation.

7—Weakened heart action and (8) a contracted arterial system should be enumerated among the general causes. Indeed, these may be important elements. Notwithstanding the above enumeration, the consensus of opinion *is opposed to the belief that any mechanical interference with the blood-speed or blood-pressure constitute sufficient causes for phlebitis, or even thrombosis* (Welch).

9—Hereditary predisposition may be rated as a possible cause. Roussel reports cases occurring in a mother and two daughters.* Paget also mentions an instance to which we soon refer. We are told that others have been reported, but our study has not revealed them.

10—*Toxins,* products of remote processes of inflammation, are credited with causing chemical changes in the endothelial lining of veins, which may diminish the normal influence towards maintaining the fluidity of the blood. This may be followed by accumulations of fibrin and thrombosis. Thus may be formed a very suitable culture-bed for alert bacteria. Welch has seen nodular deposits of lymphoid tissue in the intima with and without necrosis, and this in some cases where bacteria were not demonstrable. This, he argues, supports the toxin idea.

11—Age seems to exert no influence in the etiology of femoral phlebitis, save that many more cases of the diseases, or conditions, causative occur in active adult life.

* All puerperal.

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12—*Occupation* has seemed to be a factor. The majority of medical cases reported have occurred in persons where work compelled standing or walking much of the time.

Specific Cases (Medical):

These will naturally be classified as medical and surgical, with obstetric cases included under the latter.

MEDICAL CAUSES.

1—Typhoid Fever.—Ever since Bretennean in 1813 described typhoid as a distinct form of febrile disease, the femoral vein and its tributaries have been recognized as occasional complicating factors. We now know that what has been called "obstruction" and "thrombosis," is phlebitis with thrombosis. It usually occurs in the left femoral, sometimes in the right, and not infrequently in both veins. Often the most violent inflammation is limited to the internal saphenous, less commonly to the external. The most recent and satisfactory demonstrations tend to establish the dictum that here the primary lesion is an endophlębitis, caused by the typhoid bacillus, and that thrombosis occurs as a result of alterations in the intima, which give rise to the formation of thrombotic masses. In these thrombi typhoid bacilli, common colon bacilli and streptococci pyogenes have been demonstrated.

The first and the last have been found in the intima and media of veins involved. Murchison tells us that the frequency of the trouble in typhoid patients is about 1 per cent. DaCosta observed thirty cases among the soldiers treated at the Pennsylvania Hospital in the autumn following the Spanish-American war, about thirty per cent. of cases treated. Eighteen of these occurred after convalescence was established. Nearly all of the balance began late in the course of the fever. The astonishing frequency may be accounted for by the constant upright position necessary in the soldier's life. Relaxation of the venous trunks in the lower extremities might thus very well be caused. Yet, DaCosta believes that excessive virulence of infection operated largely. Several of these cases suffered from double femoral phlebitis. One was preceded by erysipelas (location not recorded) and parotid abscess. Another had just recovered from a double epididymitis. In this series no deaths are noted.

2.—Pneumonia.—Whether or not the diplococcus pneumonial is the definite exciting cause in those cases is not proven. Strep-

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toccocci have been demonstrated in the walls of the veins and in thrombi. The onset is invariably after defervesence, although Katz reports one case occurring on the day of crisis. Laache reports a case of pleura-pneumonia followed by left femoral and saphenous phlebitis. This case is cited because many authors mention that pleuritic pain usually precedes, by a day or two, femoral phlebitis from any cause.

Nourse's case followed left lobal pneumonia in a woman of thirty-six years, and was also left-sided. This patient had suffered from varicose veins in each of six pregnancies, and once had "phlegmosia." Kob reports an instance of death from embolism of pulmonary artery twenty-three days after onset of phlebitis of right femoral and tributaries. Here the first evidence of the process were in the external saphenous, and later in superior veins, a tumor appearing in region of junction of internal saphenous and femoral. Death was preceded by sudden fainting and a few moments of rapid labored breathing.

Porte reports right femoral phlebitis in a female of forty-eight after right apical pneumonia. The femoral invasion was followed within a few days by a sudden dyspnoea, fainting, rapid irregular pulse and exceedingly high temperature, succeeded by death. Autopsy revealed a hepatized right apex, entire obliteration of internal saphenous, and arterial obliteration at the base of left lung. There was also a clot adherent to tricuspid valve. DaCosta reports three cases. In each case left lower lobe was involved in pneumonia. One case developed phlebitis in both femorals in fourth week, far along in convalesence. Another in left and the third in right. All recovered, but resolutions were tedious. Lee Dickinson has reported seven cases, the report of which I have been unable to locate. Post-pneumonial phlebitis seems more prone to fatality than that following other medical diseases. Our study has, however, been so limited by the infrequent writing on this subject to permit of the making of comparative tables of any value.

3—Epidemic Influenza.—One of the earliest cases reported from this cause was that of Dauriac, of Bordeaux, in 1841. It developed toward the end of the course of the primary disease. Clutton, in 1898, reported seven cases, all beginning before convalescence was established, the latest case having its onset three weeks after the initial symptoms. He argues that the occurrence of phlebitis may be a guide to correct diagnosis in many obscure

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cases. This seems unreasonable because (1) phlebitis is caused by so many diseases; (2) even in these cases its appearance is often very late. In all I have found thirty-four cases of "grippe" phlebitis in the literature.

4—Acute articular rheumatism causes phlebitis of the femoral vein and its tributaries. Garnier reported two cases, both especially interesting, because a complicating endocarditis preceded the venous inflammation in each case. Both recovered. One case suffered from basilic phlebitis in the same (left) side after the femoral inflammation was well under way. The same writer collects twenty-four cases from literature. Of these cases, thirteen had primarily developed endocarditis, and eleven pleurisy with pneumonia or pulmonary congestion. These seem to his mind to bear some causative relation to the phlebitis. He believes that the infection of the venous tunic occurs either from direct infection of micro-organisms floating in the blood, or from minute infectious fragments sent along the circulation from heart valves or from pulmonary capillaries. He lays great stress, however, on the predisposing influences of the slowing of blood-current and the abnormal proportion of fibrin in the blood of rheumatic patients. All cases in his series occurred in persons compelled by their occupation to stand nearly or quite all of their working hours.

Combemale and Herin record a case preceding an attack of rheumatism and diminishing rapidly as the outbreak of the latter became typical.

5—Gout has been etiologically associated with phlebitis, especially of the femorals, for many decades. Such a phlebitis may complicate the commonest gouty inflammation, that of the foot, or may occur without this in patients having gouty diathesis. It is very apt to be of symmetrical type. Sir James Paget long ago called attention to its tendency to occur in patches. He also remarked its frequent recurrence in the same subject and that a strong hereditary predisposition is often found. One of his patients recalled seven relatives who had previously suffered attacks, including his father, mother, and maternal grandmother, two uncles and two cousins. Paget's essay on Gouty Phlebitis is the best literature on this subject which I have been able to find.

6—Pulmonary Tuberculosis.—Most commonly in this disease phlebitis is a late complication in chronic cases, but occasionally is seen in the acute forms. It almost invariably shows its first

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evidence in the lower leg, the pain œdema gradually creeping upward.

Dodwell, in his most careful study of this subject, considers that there the thrombosis precedes actual inflammation, chiefly because the swelling precedes the pain, vein tenderness and increased fever by several days. There is less tenderness than in the average cases. The original site of the lesion seems to be in the popliteal vein. Dodwell does not doubt existence of true phlebitis in these cases as some observers have done, and account for slight or absent inflammatory symptoms by the fact that "The asthenic condition of phthisical patients diminishes the reaction to severe lesions." Vaquez tells us of a case of non-obliterating phlebitis of both sides, especially severe on left. In this case also the first sign was peri-malleolar œdema. Shooting pains in legs followed. Death from primary disease came before resolution of veins. Clots filled popliteal veins, and the vasa vasorum were obliterated. In all cases Vasquez found tubercule bacilli without other bacteria in phlebitic thrombi of left femoral and profunda veins, but most frequently streptococci or other pyogenic organisms were demonstrable.

7—Syphilitic Phlebitis occurs in two classes (Henzard) (A) acute cases accompanying the secondary stage and (B) chronic cases, with multiple gummata of venous wall, or a general sclerotic process. Protesch, of Bonn, in 1848, culled one hundred and seven cases from literature. He divides them into intraparenchymatous and extra parenchymatous classes.

8—Scarlatina is recorded by many text-book writers as a cause of phlebitis. The only case found in literature occurred in the veins of the upper extremity and brain.

9—Chlorosis (anaemia of young women) is not very infrequently complicated by phlegmasia alba dolens. The cases reported have all been extremely anaemic. Reckstro observed three cases in virgins, two of eighteen years and one of twenty-one. They all suffered severe pain with rapid weak pulses and high temperatures. One case followed immediately after an attack of dry pleurisy. Multiple attacks of faintness preceded phlebitis in one case. In Hermans' case hemaglobin was reduced to 48 per cent. and red blood cells to two and a quarter million. She made very poor recovery, some degree of œdema persisting. No pelvic lesion existed. Both lower extremities were involved. Mowat's case in a virgin of eighteen; relapse several months

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after apparently complete recovery. Kidd found that his patient, who had had three attacks of diminishing intensity, was rapidly and favorably influenced by the treatment of the anaemia (right side).

10—Typhus fever may be followed by femoral phlebitis. As far back as 1831, Prof. Laurie, of Glasgow, recorded his own case. Paget quotes from a personal letter from Laurie received in 1858 concerning it.

11—Gonorrheal cases are comparatively rare, but cases are recorded by Martel and Perrin.

Causes mentioned in various works, but case examples of which I have been unable to find, are:

12—Dysentery.
13—Variola.
14—Suppurative tonsilitis (or peri tonsilitis).
15—Measles.
16—Asiatic Cholera.
17—Relapsing Fever.
18—Primary Endocarditis
19—Cacaemia.
20—Leucocythemia.

In concluding this series of the medical causes, I would call your attention to points: 1—The left femoral is the vein of least resistance; 2—The frequency with which secondary pleurisy or endocarditis precedes femoral phlebitis; 3—That contribution of detailed reports, with bacteriologic observations whenever they are possible, are greatly needed in our literature.

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HISTORICAL.

The Associated Physicians of Long Island was organized at the Union League Club, in Brooklyn, April 14, 1898, with Dr. Louis N. Lanehart, of Hempstead, as chairman, and Dr. Robert J. Morrison as secretary. Its purpose was to bring into closer relationship the members of the regular county societies of Long Island.

The first regular meeting was held at Garden City, Long Island, June 8, 1898, at which the organization was perfected by the adoption of a title and by-laws, and the election of officers.

It was incorporated October 17, 1899, with the following Board of Directors:

Dr. William Browning, Brooklyn.
Dr. Louis N. Lanehart, Hempstead.
Dr. James McF. Winfield, Brooklyn.
Dr. Robert J. Morrison, Brooklyn.
Dr. Arthur H. Terry, Patchogue.

The following meetings have been held:

1. Garden City, June 8, 1898.
2. Patchogue, October 8, 1898.
3. Brooklyn, January 21, 1899.
4. Garden City, June 22, 1899.
5. Central Islip, October 21, 1899.
6. Brooklyn, January 27, 1900.
7. Northport, June 16, 1900.
8. East Hampton, October 6, 1900.
9. Brooklyn, January 26, 1900.
10. Sag Harbor, June 16, 1901.
11. Garden City, October 19, 1901.
12. Brooklyn, January 25, 1902.
13. Islip, June 21, 1902.
14. Riverhead, October 18, 1902.
15. Brooklyn, January 24, 1903.
16. Southampton, June 13, 1903.
17. Garden City, October 17, 1903.
18. Brooklyn, January 23, 1904.

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FORMER OFFICERS OF THE ASSOCIATED PHYSICIANS OF LONG ISLAND.

1898-1899.

President: William Browning, Brooklyn.
First Vice-President: Louis N. Lanehart, Hempstead.
Second Vice-President: William A. Hulse, Bayshore.
Third Vice-President: Charles Jewett, Brooklyn.
Secretary: Robert J. Morrison, Brooklyn.
Treasurer: Arthur H. Terry, Patchogue.
Historian: Joseph H. Hunt, Brooklyn.
Chairman Executive Committee: Henry A. Fairbairn, Brooklyn.

1899-1900.

President: Louis N. Lanehart, Hempstead.
First Vice-President: James M. Winfield, Brooklyn.
Second Vice-President: William B. Gibson, Huntington.
Third Vice-President: James S. Cooley, Glen Cove.
Secretary: Robert J. Morrison, Brooklyn.
Treasurer: Arthur H. Terry, Patchogue.
Historian: Joseph H. Hunt, Brooklyn.
Chairman Executive Committee: Calvin F. Barber, Brooklyn.

1900-1901.

President: James M. Winfield, Brooklyn.
First Vice-President: William B. Gibson, Huntington.
Second Vice-President: Calvin F. Barber, Brooklyn.
Third Vice-President: James S. Cooley, Glen Cove.
Secretary: Charles Dwight Napier, Brooklyn.
Treasurer: J. Ensor Hutcheson, Rockville Centre.
Historian: Joseph H. Hunt, Brooklyn.
Chairman Executive Committee: John E. Sheppard, Brooklyn.

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1901-1902.

President: William B. Gibson, Huntington.
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Second Vice-President: James S. Cooley, Glen Cove.
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Secretary: James Cole Hancock, Brooklyn.
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President: Calvin F. Barber, Brooklyn.
First Vice-President: William H. Ross, Brentwood.
Second Vice-President: J. Frank Valentine, Richmond Hill.
Third Vice-President: Robert J. Morrison, Brooklyn.
Secretary: James Cole Hancock, Brooklyn.
Treasurer: John P. Heyen, Northport.

1903-1904.

President: William H. Ross, Brentwood.
First Vice-President: J. Frank Valentine, Richmond Hill.
Second Vice-President: Robert J. Morrison, Brooklyn.
Third Vice-President: William B. Savage, East Islip.
Secretary: James Cole Hancock, Brooklyn.
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First Vice-President: J. Ensor Hutcheson, Rockville Centre.
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James P. Warbasse, Brooklyn, Chairman.
W. A. Baker, Islip.
John Mann, Old Westbury.

Membership.

Charles D. Napier, Brooklyn, Chairman.
Edwin S. Moore, Bayshore.
Harold E. Hewlett, Babylon.

Legal.

James M. Winfield, Brooklyn, Chairman.
Charles G. J. Finn, Hempstead.
John H. Benjamin, Riverhead.

Publication.

Nathan T. Beers, Jr., Brooklyn, Chairman.
William H. Zabriskie, Glen Cove.
William E. Butler, Brooklyn.

Historical.

James S. Cooley, Glen Cove, Chairman.
William Schroeder, Brooklyn.
Walter Lindsay, Huntington.

Public Health.

Frank Overton, Patchogue, Chairman.
Albert E. Payne, Riverhead.
John P. Heyen, Northport.

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SUB-COMMITTEES ON PUBLIC HEALTH.

Committee to Investigate Tuberculosis.

Hubert Arrowsmith, Brooklyn, Chairman.
Gustav A. Fensterer, Floral Park.
Winfield S. Bennett, Patchogue.

Committee to Investigate Anopheles Mosquito.

Prof. G. G. Scott, New York, Honorary Chairman.
Joseph F. Bloodgood, Flushing.
Louis C. Ager, Brooklyn.

Committee to Investigate Tetanus.

Ezra H. Wilson, Brooklyn, Chairman.
Silas R. Corwith, Bridgehampton.
Hugh Halsey, Southampton.

Committee to Investigate Water Supply.

William H. Ross, Brentwood, Chairman.
George F. Fanning, Smithtown Branch.
Arthur H. Terry, Patchogue.

Entertainment.

William F. Campbell, Brooklyn, Chairman.
George K. Meynen, Jamaica.
George A. Smith, Central Islip.
Louis N. Lanehart, Hempstead.
Lefferts A. McClelland, Brooklyn.

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NECROLOGY

1904

Frank Whitfield Shaw
Died January 8, 1904

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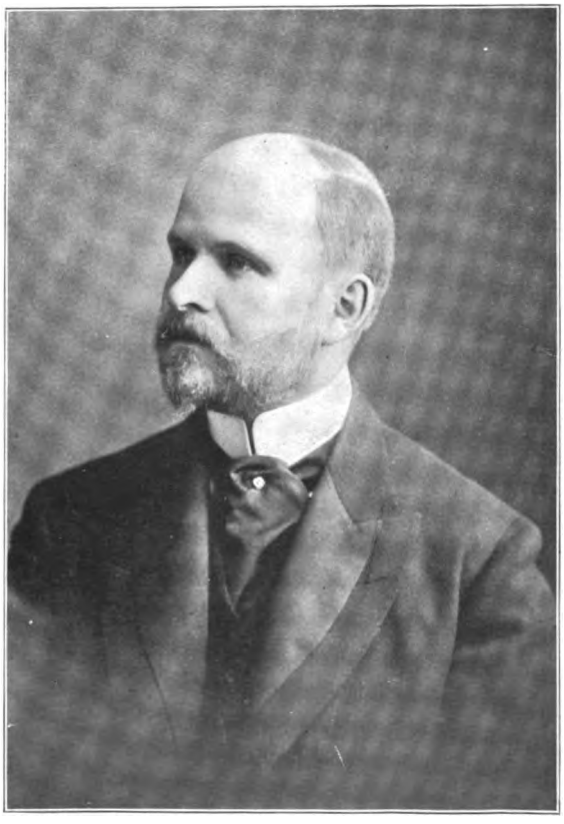

DR. FRANK W. SHAW.

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CONSTITUTION AND BY-LAWS

OF

ASSOCIATED PHYSICIANS OF LONG ISLAND,

AS AMENDED TO DATE.

ARTICLE I.

SECTION I. This Society shall be known as the Associated Physicians of Long Island. Its objects shall be those of a general and scientific medical society, the study of the natural conditions and prevalent diseases of Long Island, and the promotion of medical interests by the medical profession.

SEC. 2. Eligibility to membership shall be limited to regular practitioners who are members in good standing of their County Societies, and who have the indorsement of the Membership Committee of the Society.

ARTICLE II.

SECTION 1. The officers shall be a President and a Vice-President, each from one of the County Medical Societies of Long Island; a Secretary and a Treasurer. They shall be elected by a majority vote at the annual meeting.

SEC. 2. There shall also be a board of five Directors, consisting of the retiring President, the President, First Vice-President, Secretary, and Treasurer, respectively, by virtue of their several offices.

SEC. 3. Should a vacancy occur in the Board, it shall be filled by the remaining members of the said Board.

SEC. 4. Every three years there shall be elected a delegate to the Medical Society of the State of New York.

ARTICLE III.

SECTION 1. The following Standing Committees shall be appointed by the chair: A Scientific and Executive Committee, a

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Membership Committee, a Legal Committee, a Committee on Publication, a Historical Committee, and a Committee on Public Health. The Historical Committee shall be a permanent committee, and when vacancies occur they shall be filled by the President of the Association.

SEC. 2. There may also be such temporary committees appointed as are necessary, including a Local or Entertainment Committee for each session.

ARTICLE IV.

SECTION 1. Stated meetings shall be held three times a year, in June, October, and January, respectively, the annual meeting to be held at Brooklyn in January. Special meetings may be called by the President at the written request of five members.

SEC. 2. For scientific purposes a quorum shall always be presumed. For executive business, twenty members shall be necessary.

ARTICLE V.

The duties of the officers are explained by their titles. The *Executive Committee* shall provide the program and have charge of the scientific sessions. It shall be the duty of the *Membership Committee* to secure and recommend new members for the Society. The *Legal Committee* shall have charge of all legislative and legal matters of interest to the profession of the Island. The *Publication Committee* shall provide a channel for the publication of papers, and shall issue a revised edition of the manual after each annual meeting. They shall also provide a book for the registry of members attending each meeting. The *Historical Committee,* which shall be composed of a member from each County Society of the Island, shall collect historical data of interest to the profession on Long Island. The *Committee on Public Health,* which shall be composed of a member from each County Society of the Island, shall have charge of all matters pertaining to the public health, and its scope shall also include the natural features and endemic diseases of the Island.

ARTICLE VI.

SECTION 1. New members shall be admitted only on the recommendation of the Membership Committee and a two-thirds ballot of those present and voting.

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SEC. 2. Every applicant for membership shall sign the printed application blank.

ARTICLE VII.

The regular dues shall be determined at the annual meeting. Special assessments, not to exceed in amount the annual dues, may be levied by a majority vote at any meeting.

ARTICLE VIII.

SECTION 1. Any member who fails to maintain membership in his County Society shall thereby forfeit membership in this Society.

SEC. 2. A member who is in arrears for two years' dues shall be dropped.

SEC. 3. An applicant for membership who has been elected, but who fails to qualify within six months, shall forfeit his election.

ARTICLE IX.

A member of the Bar shall be selected as Honorary Counsel.

ARTICLE X.

The following shall be the order of business:

Reading of Minutes.
Report of Membership Committee.
Reports from Other Committees.
Unfinished Business.
New Business.
Scientific Session.
Adjournment.

ARTICLE XI.

At the annual meeting the following shall be the order of business:

Reading of Minutes.
Report of Membership and Other Committees.
Report of Secretary.
Report of Treasurer.
Report of Historian.

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Unfinished Business.
New Business.
Election of Officers.
Scientific Session.
Installation of New Officers.
Adjournment.

Article XII.

Section 1. Amendments to the By-Laws may be adopted at any meeting, provided they are proposed in writing at the last previous meeting, and receive a two-thirds ballot of the members present and voting.

Sec. 2. A By-Law may be suspended for a specific time, by a unanimous vote.

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ROSTER FOR 1904.

Ager, Louis Curtis.....Seventieth St. and Third Ave., Brooklyn, N. Y.
Alderton, Henry A.....142 Clinton St., Brooklyn, N. Y.
Alleman, Lewis A. W....64 Montague St., Brooklyn, N. Y.
Anderson, Herbert C.....194 Union St., Brooklyn, N. Y.
Anderson, Robert B.....765 Nostrand Ave., Brooklyn, N. Y.
Applegate, William S....931 Flatbush Ave., Brooklyn, N. Y.
Arrowsmith, Albert H....170 Clinton St., Brooklyn, N. Y.
Auger, Henri M.....Jamaica, L. I.

Bacon, Charles B.....109 Cumberland St., Brooklyn N. Y.
Bailey, Frederick D.....260 Hancock St., Brooklyn, N. Y.
Baker, Clarence A.....Yaphank, L. I.
Baker, William A.....Islip, L. I.
Baldwin, L. Grant.....28 Schermerhorn St., Brooklyn, N. Y.
Barber, Calvin F.....57 S. Oxford St., Brooklyn, N. Y.
Barker, Herbert L.....Woodside, L. I.
Barnes, Irving F.....Oyster Bay, L. I.
Barry, John H.....111 Fifth St., Long Island City, L. I.
Bartley, Elias H.....65 S. Portland Ave., Brooklyn, N. Y.
Beers, Jr., Nathan T.....1265 Bedford Ave., Brooklyn, N. Y.
Belcher, William Nathan..33 S. Portland Ave., Brooklyn, N. Y.
Bell, Alfred.....37 Linden St., Brooklyn, N. Y.
Bell, J. Finley.....Englewood, N. J.
Bender, Herman P.....683 Bushwick Ave., Brooklyn, N. Y.
Benjamin, Frank E.....Shelter Island, L. I.
Benjamin, John H.....Riverhead, L. I.
Bennett, Edward C.....249 Fifty-eighth St., Brooklyn, N. Y.
Bennett, Winfield S.....Patchogue, L. I.
Benton, Stuart H.....720 Nostrand Ave., Brooklyn, N. Y.
Biggam, William H.....Dean St. and Nostrand Ave., Brooklyn, N. Y.
Bishop, E. S.....919 Bedford Ave., Brooklyn, N. Y.
Blaisdell, Silas C.....500 Bedford Ave., Brooklyn, N. Y.

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Blake, Benjamin F. M....35 Schermerhorn St., Brooklyn, N. Y.
Blanchard, Austin J.....Jamaica, L. I.
Bloodgood, Joseph F.....Flushing, L. I.
Bogart, J. Bion.....423 Washington Ave., Brooklyn, N. Y.
Bogart, Joseph H.....Roslyn, L. I.
Braislin, William C.....217 St. James' Place, Brooklyn, N. Y.
Brink, Charles G.....State Hospital, Central Islip, L. I.
Brinsmade, William B....117 Montague St., Brooklyn, N. Y.
Bristow, Algernon T.....234 Clinton St., Brooklyn, N. Y.
Browning, William.....54 Lefferts Place, Brooklyn, N. Y.
Brundage, Albert H.....1073 Bushwick Ave., Brooklyn, N. Y.
Brush, Arthur C.....29 S. Portland Ave., Brooklyn, N. Y.
Buist, Geo. L., Jr.....90 Halsey St., Brooklyn, N. Y.
Bumster, P. H.....36 Ely Ave., Long Island City.
Burnett, Peter V.....170 Keap St., Brooklyn, N. Y.
Burnett, Wm. J.....129 Third St., Long Island City.
Butler, Glentworth R....229 Gates Ave., Brooklyn, N. Y.
Butler, William E.....113 Halsey St., Brooklyn, N. Y.

Caldwell, M. Stuart.....Far Rockaway, L. I.
Campbell, William F.....86 Greene Ave., Brooklyn, N. Y.
Carolan, Eugene J.....946 Bedford Ave., Brooklyn, N. Y.
Carter, G. Herbert.....Huntington, L. I.
Chapman, William L.....19 Lafayette Ave., Brooklyn, N. Y.
Chase, Walter B.....263 Hancock St., Brooklyn, N. Y.
Chick, Edson S.....376 Gates Ave., Brooklyn, N. Y.
Clark, Frank H.....758 Putnam Ave., Brooklyn, N. Y.
Clayland, John M.....252 Rodney St., Brooklyn, N. Y.
Cocke, William I.....Port Washington, L. I.
Collins, Burnett C.....645 St. Marks Ave., Brooklyn, N. Y.
Combes, Abbott C.....Elmhurst, L. I.
Combes, Rodney C. F....185 Hancock St., Brooklyn, N. Y.
Cooley, James S.....Glen Cove, L. I.
Corwith, Silas R.....Bridgehampton, L. I.
Coughlin, Robert E.....286 Forty-seventh St., Brooklyn, N.Y.
Cox, Charles N.....257 Jefferson Ave., Brooklyn, N. Y.

Davis, George H.....1016 Halsey St., Brooklyn, N. Y.
Davis, Milton B.....Patchogue, L. I.
Deely, George E.....224a Sixth Ave., Brooklyn, N. Y.

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De Forest, Henry P.....369 Hancock St., Brooklyn, N. Y.
De Lano, Frank T.....Rockville Centre, L. I.
Delatour, H. Beeckman...73 Eighth Ave., Brooklyn, N. Y.
Dickinson, Robert L.....168 Clinton St., Brooklyn, N. Y.
Donahue, George H.....Northport, L. I.
Dow, Horace D.....Maspeth, L. I.
Dowd, Jas. H. B.....3923 Fort Hamilton Ave., Brooklyn, N. Y.
Dower, Andrew J.....380 Union St., Brooklyn, N. Y.
Dudley, William F.....32 Livingston St., Brooklyn, N. Y.
Durkee, John W.....Sea Cliff, L. I.

Edwards, David.....East Hampton, L. I.
Edwards, Lawrence S....Patchogue, L. I.
Elliott, Robert M.....Long Island State Hospital, Flatbush, L. I.
Emery, Z. Taylor.....481 Washington Ave., Brooklyn, N. Y.
Erdmann, A. F.....408 Ninth St., Brooklyn, N. Y.
Evans, George A.....909 Bedford Ave., Brooklyn, N. Y.
Everson, George.....364 Greene Ave., Brooklyn, N. Y.

Fairbairn, Henry A.....249 McDonough St., Brooklyn, N. Y.
Faller, George W.....Oyster Bay, L. I.
Fanning, George T.....Smithtown Branch, L. I.
Fensterer, Gustav A.....Floral Park, L. I.
Finch, F. A.....Amagansett, L. I.
Finn, Charles G. J.....Hempstead, L. I.
Fitzgerald, J. F.....Kings County Hospital, Brooklyn, N. Y.
Fleming, James W.....471 Bedford Ave., Brooklyn, N. Y.
Folger, Rupert.....Whitestone, L. I.
Foote, Lewis N.....627 Marcy Ave., Brooklyn, N. Y.
Foster, Clarendon A.....202 Berkeley Place, Brooklyn, N. Y.
Fowler, George R.....302 Washington Ave., Brooklyn, N. Y.
Fowler, P. Van Benschoten Centre Moriches, L. I.
Fowler, Russell S.....388 Lafayette Ave., Brooklyn, N. Y.
Frey, Walter G.....116 Third St., Long Island City.
Frischbier, Otto G.....235 Humboldt St., Brooklyn, N. Y.
Fuhs, Jacob.....871 Park Place, Brooklyn, N. Y.

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Gallagher, James T.....449 Lafayette Ave., Brooklyn, N. Y.
Gardiner, Sidney H.....1085 Gates Ave., Brooklyn, N. Y.
Geis, Norman P.....455 Classon Ave., Brooklyn, N. Y.
Gibbons, John T.....1297 Bushwick Ave., Brooklyn, N. Y.
Gibson, H. G., Jr.....Central Islip, L. I.
Gibson, William B.....Huntington, L. I.
Gildersleeve, Charles P...18 Schermerhorn St., Brooklyn, N. Y.
Goodrich, Charles H.....280 Park Place, Brooklyn, N. Y.
Goodridge, Edwin A.....Flushing, L. I.
Grant, Walter S.....340 Stuyvesant Ave., Brooklyn, N. Y.
Grover, Harvey L.....849 Quincy St., Brooklyn, N. Y.

Halsey, Hugh.....Southampton, L. I.
Halsey, James L.....Islip, L. I.
Hammond, George H.....Freeport, L. I.
Hancock, James C.....43 Cambridge Place, Brooklyn, N. Y.
Harrigan, John .....401 Clinton St., Brooklyn, N. Y.
Harrington, Burt D.....34 Lenox Road, Brooklyn, N. Y.
Harrison, Daniel A.....2 Sidney Place, Brooklyn, N. Y.
Hatch, Edwin A.....823 De Kalb Ave., Brooklyn, N. Y.
Hendrickson, Samuel.....Jamaica, L. I.
Henry, Charles C.....56 Clark St., Brooklyn, N. Y.
Hettesheimer, Chas. J....309 Wyckoff Ave., Brooklyn, N. Y.
Hewlett, Harold E.....Babylon, L. I.
Hewlett, William W.....Babylon, L. I.
Heyen, John P.....Northport, L. I.
Hicks, Edward E.....295 Stuyvesant Ave., Brooklyn, N. Y.
Hoag, David E.....985 Lafayette Ave., Brooklyn, N. Y.
Hodgskin, Edward S.....13 Seventh Ave., Brooklyn, N. Y.
Hoople, Heber N.....253 Gates Ave., Brooklyn, N. Y.
Horni, John.....179 Penn St., Brooklyn, N. Y.
Hotchkiss, Henry T.....146 Halsey St., Brooklyn, N. Y.
Howe, Alexander C.....307 Cumberland St., Brooklyn, N. Y.
Hoxie, Edward H.....1 Hart St., Brooklyn, N. Y.
Hubbard, William S.....97 Halsey St., Brooklyn, N. Y.
Hughes, Peter.....467 Bedford Ave., Brooklyn, N. Y.
Hulse, William A.....Bay Shore, L. I.
Hunt, Joseph H.....1085 Bedford Ave., Brooklyn, N. Y.
Hunter, G. S.....Sag Harbor, L. I.
Hutcheson, J. Ensor.....Rockville Centre, L. I.

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Hyde, Clarence R.....126 Joralemon St., Brooklyn, N. Y.
Hyde, Joel W.....215 Schermerhorn St., Brooklyn, N. Y.
Hyman, Marcus B.....Central Islip, L. I.

Ingalls, James W.....874 Lafayette Ave., Brooklyn, N. Y.

Jacques, A. D.....Lynbrook, L. I.
Jameson, P. Chalmers....139 Montague St., Brooklyn, N. Y.
Jenkins, Charles R.....31 Conselyea St., Brooklyn, N. Y.
Jennings, John E.....41 Halsey St., Brooklyn, N. Y.
Jewett, Charles.....330 Clinton Ave., Brooklyn, N. Y.
Jewett, Frederic A.....282 Hancock St., Brooklyn, N. Y.
Jewett, William A.....382 Adelphi St., Brooklyn, N. Y.
Judd, Albert M.....188 Sixth Ave., Brooklyn, N. Y.

Kene, Joseph A.....64 Greene Ave., Brooklyn, N. Y.
Kennedy, James C.....762 Willoughby Ave., Brooklyn, N. Y.
Kerr, C. Le Grand.....97 Cumberland St., Brooklyn, N. Y.
Kevin, J. Richard.....252 Gates Ave., Brooklyn, N. Y.
Keyes, James J.....226 Seventeenth St., Brooklyn, N. Y.
Kindred, J. Joseph.....Astoria, L. I.
Kingman, Robert.....Glen Cove, L. I.
Kirk, F. J.....404 Hamburg Ave., Brooklyn, N. Y.
Koerner, Wm. F.....154 Rodney St., Brooklyn, N. Y.
Krichbaum, Philip B.....Sayville, L. I.
Kuhn, George R.....122 Clinton Ave., Brooklyn, N. Y.

Lack, C. Eugene.....692 Tenth St., Brooklyn, N. Y.
Lanehart, Louis N.....Hempstead, L. I.
Langstaff, J. Elliott.....19 Seventh Ave., Brooklyn, N. Y.
Lauria, Leon.....249 Hewes St., Brooklyn, N. Y.
Lawrence, Andrew W....588 Bedford Ave., Brooklyn, N. Y.
Lee, John A.....366 Herkimer St., Brooklyn, N. Y.
Lester, John C.....179 Schermerhorn St., Brooklyn, N. Y.
Lewis, Morley B.....East Hampton, L. I.
Lewis, Stewart.....13 Cambridge Place, Brooklyn, N. Y.
Lincoln, Henry W.....113 Hancock St., Brooklyn, N. Y.
Lindsay, Walter.....Huntington, L. I.
Little, George F.....469 Clinton Ave., Brooklyn, N. Y.

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Little, William A.....923 Bedford Ave., Brooklyn, N. Y.
Loper, Arthur C.....Greenport, L. I.
Love, Cornelius R.....167 Clinton St., Brooklyn, N. Y.
Lucas, David F.....552 Pacific St., Brooklyn, N. Y.
Luce, Charles A.....Amityville, L. I.
Ludlam, Charles H.....Hempstead, L. I.
Luhrsen, Ernest F.....292 Greene Ave., Brooklyn, N. Y.
Lutz, Stephen H.....551 Madison St., Brooklyn, N. Y.
Lyons, John J.....485 Clinton St., Brooklyn, N. Y.

MacEvitt, John C.....401 Clinton St., Brooklyn, N. Y.
MacVean, C. H.....Kings County Hospital, Brooklyn, N. Y.
Macumber, John L.....249 Washington Ave., Brooklyn, N. Y.
Macfarlane, Robert F....329 Broadway, Astoria, L. I.
MacGilvary, Stanley H...820 Bedford Ave., Brooklyn, N. Y.
Maddren, William.....1 Hanson Place, Brooklyn, N. Y.
Maddren, William H.....131 So. Oxford St., Brooklyn, N. Y.
Magness, Frank H.....Central Islip, L. I.
Malcolm, William J.....Jericho, L. I.
Manley, Mark.....261 Monroe St., Brooklyn, N. Y.
Manly, Bradley F.....Port Jefferson, L. I.
Mann, John.....Old Westbury, L. I.
Marshall, Joseph Hall....536 Monroe St., Brooklyn, N. Y.
Matheson, A. Ross.....37 Seventh Ave., Brooklyn, N. Y.
Matheson, Sewall.....578 Bergen St., Brooklyn, N. Y.
Matson, Nathaniel.....415 Greene Ave., Brooklyn, N. Y.
Mayne, Earl H.....132 Montague St., Brooklyn, N. Y.
McCammon, F. J.....359 Stuyvesant Ave., Brooklyn, N. Y.
McClelland, Leflerts A...78 McDonough St., Brooklyn, N. Y.
McCorkle, John A.....149 Clinton St., Brooklyn, N. Y.
McDonald, Henry. .....Morris Park, L. I.
MacNamara, Sylvester J..369 Union St., Brooklyn, N. Y.
McNaughton, George. ...479 Clinton Ave., Brooklyn, N. Y.
Meeker, Louis E.....44 Linden St., Brooklyn, N. Y.
Merritt, Frederick C.....Sayville, L. I.
Meynen, George K.....Jamaica, L. I.
Miles, Clarence C.....Greenport, L. I.
Miller, F. H.....64 Pennsylvania Ave., Brooklyn, N. Y.

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Miller, Louis H.....109 Halsey St., Brooklyn, N. Y.
Mills, Henry M.....192a Sixth Ave., Brooklyn, N. Y.
Moore, E. S.....Bay Shore, L. I.
Moore, J. P.....211 Franklin St., Astoria, L. I.
Morris, Edward J.....771a Union St., Brooklyn, N. Y.
Morrison, Robert J.....354 Tompkins Ave., Brooklyn, N. Y.
Morton, Henry H.....32 Schermerhorn St., Brooklyn, N. Y.
Muren, G. Morgan.....73 Orange St., Brooklyn, N. Y.
Murray, Archibald.....69 Remsen St., Brooklyn, N. Y.
Murray, Edw. T.....Central Islip, L. I.
Myerle, David.....510 Bedford Ave., Brooklyn, N. Y.

Nammack, Wm. H.....Far Rockaway, L. I.
Napier, Charles D.....1273 Bedford Ave., Brooklyn, N. Y.
Nichols, Louis L.....386 Stuyvesant Ave., Brooklyn, N. Y.
Niesley, Charles M.....Manhasset, L. I.
North, Jr., Nelson L.....118 Hooper St., Brooklyn, N. Y.
Northbridge, Wm. A.....31 Hanson Place, Brooklyn, N. Y.
Nugent, John.....Southampton, L. I.

O'Neill, John H.....291 De Kalb Ave., Brooklyn, N. Y.
Ordronaux, John.....Roslyn, L. I.
Overton, Frank.....Patchogue, L. I.

Palmer, Ernest.....155 Clinton St., Brooklyn, N. Y.
Parker, E. A.....262 McDonough St., Brooklyn, N. Y.
Parrish, Paul L.....1448 Bedford Ave., Brooklyn, N. Y.
Payne, Albert E.....Main St., Riverhead, L. I.
Peterman, Chas. P.....809a Greene Ave., Brooklyn, N. Y.
Petersen, Christian E.....1097 Dean St., Brooklyn, N. Y.
Pettit, Henry S.....Adelphi College, Brooklyn, N. Y.
Pilcher, Lewis S.....386 Grand Ave., Brooklyn, N. Y.
Pilcher, Paul M.....386 Grand Ave., Brooklyn, N. Y.
Polak, John O.....287 Clinton Ave., Brooklyn, N. Y.
Pomeroy, Ralph H.....511 Nostrand Ave., Brooklyn, N. Y.
Pool, William P.....147 Clinton St., Brooklyn, N. Y.
Price, Henry R.....163 Hancock St., Brooklyn, N. Y.
Preston, E. F.....Amityville, L. I.

Rankin, John.....600 Jefferson Ave., Brooklyn, N. Y.
Rankin, William H.....151 Hancock St., Brooklyn, N. Y.

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Rave, Adolph G.....New Hyde Park, L. I.
Rave, Edward G.....Hicksville, L. I.
Raynor, Addison .....977 Flatbush Ave., Brooklyn, N. Y.
Reeve, Arthur L.....420 Gold St., Brooklyn, N. Y.
Reynolds, Willard G.....162 Halsey St., Brooklyn, N. Y.
Robertson, Victor A.....834 Union St., Brooklyn, N. Y.
Rogers, Herbert C.....377 Gates Ave., Brooklyn, N. Y.
Rogers, H. Edward.....36 Troutman St., Brooklyn, N. Y.
Ross, Walter H.....Hewes St. and Lee Ave., Brooklyn, N. Y.
Ross, William H.....Brentwood, L. I.
Royce, Rubert S.....211 Greene Ave., Brooklyn, N. Y.

Savage, William B.....East Islip, L. I.
Schauf, Adam.....198 Vernon Ave., Brooklyn, N. Y.
Schelling, Henry L.....841 Willoughby Ave., Brooklyn, N. Y.
Schoenijahn, W. Carl....822 Union St., Brooklyn, N. Y.
Schroeder, William.....339 President St., Brooklyn, N. Y.
Scofield, Charles E.....152 Taylor St., Brooklyn, N. Y.
Scott, Peter.....128 Reid Ave., Brooklyn, N. Y.
Scovil, William T.....Hillside Ave., Richmond Hill, L. I.
Seymour, Wilbur H.....233 Clinton St., Brooklyn, N. Y.
Shattuck, Jr., Warren S..147 Clinton St., Brooklyn, N. Y.
Shea, J. D.....427 Eighth St., Brooklyn, N. Y.
Shepard, Wm. H.....324 Fifty-second St., Brooklyn, N. Y.
Sheppard, John E.....130 Montague St., Brooklyn, N. Y.
Sherwell, Samuel. .....33 Schermerhorn St., Brooklyn, N. Y.
Sherwood, Walter A.....562 Bergen St., Brooklyn, N. Y.
Shipley, Alfred E.....239 Keap St., Brooklyn, N. Y.
Simmons, William.....23 Schermerhorn St., Brooklyn, N. Y.
Skene, William H.....Portland, Oregon.
Skidmore, Melville.....East Moriches, L. I.
Skinner, Barton D.....Greenport, L. I.
Skinner, Erasmus D.....Mineola, L. I.
Smith, George A.....Manhattan State Hospital, Central Islip, L. I.
Smith, Edward J.....86 Vernon Avenue, Brooklyn, N. Y.
Smith, Henry Mitchell....64 Montague St., Brooklyn, N. Y.
Snyder, William Halleck..40 Schermerhorn St., Brooklyn, N. Y.
Steele, W. J.....Baldwins, L. I.

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Stickle, Charles W.....1315 Fifty-second St., Brooklyn, N. Y.
Stivers, John R.....180 Lefferts Place, Brooklyn, N. Y.
Story, Charles B.....Bayside, L. I.
Strong, Benj. G.....434 Jackson Ave., Long Island City.
Sullivan, John D.....74 McDonough St., Brooklyn, N. Y.
Sullivan, R. H.....42 Macon St., Brooklyn, N. Y.

Tag, Charles H.....168 Keap St., Brooklyn, N. Y.
Taylor, J. Richard.....1275 Bedford Ave., Brooklyn, N. Y.
Taylor, Vernon E.....104 Utica Ave., Brooklyn, N. Y.
Terry, Arthur H.....Patchogue, L. I.
Tomes, William A.....500 Classon Ave., Brooklyn, N. Y.
Townsend, Palmer.....588 Jefferson Ave., Brooklyn, N. Y.
Trask, James D.....112 E. Thirtieth St., N. Y. City
Treadwell, George H.....64 S. Portland Ave., Brooklyn, N. Y.
Truslow, Walter.....168 Clinton St., Brooklyn, N. Y.

Valentine, J. Frank.....Richmond Hill, L. I.
Van Cott, Jr., Joshua M..188 Henry St., Brooklyn, N. Y.
Van Deinse, A. P.....Sayville, L. I.

Wadsworth, Emery M....60 Brooklyn Ave., Brooklyn, N. Y.
Walling, Charles W.....Bellport, L. I.
Walker, Irving L.....Central Islip, L. I.
Warbasse, James P.....68 Greene Ave., Brooklyn, N. Y.
Warren, David E.....Long Island State Hospital, Flatbush, L. I.
Waterworth, William.....3 Hancock St., Brooklyn, N. Y.
Waugh, Darwin W.....388 Clinton St., Brooklyn, N. Y.
Waugh, H. H.....39 Schermerhorn St., Brooklyn, N. Y.
Webster, Henry G.....162 Halsey St., Brooklyn, N. Y.
Weekes, Wm. C.....Babylon, L. I.
Wells, Charles E.....Sag Harbor, L. I.
Wells, Joseph E.....410 Clinton St., Brooklyn, N. Y.
West, Frank E.....172 Clinton St., Brooklyn, N. Y.
Westbrook, Richard W...1145 Dean St., Brooklyn, N. Y.
Wheeler, Edward A.....110 Ross St., Brooklyn, N. Y.
Williams, George A.....449 Hancock St., Brooklyn, N. Y.
Williams, John G.....753a Union St., Brooklyn, N. Y.

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Wilson, Ezra H.....194 Keap St., Brooklyn, N. Y.
Wilson, Frank E.....1242 Bushwick Ave, Brooklyn, N. Y.
Winfield, James M.....47 Halsey St., Brooklyn, N. Y.
Wood, J. Scott.....172 Sixth Ave., Brooklyn, N. Y.
Wood, Philips M.....448 Fulton St., Jamaica, L. I.
Wood, Walter C.....1276 Pacific St., Brooklyn, N. Y.
Woolsey, Wm. C..... 88 Lafayette Ave., Brooklyn, N. Y.
Wright, Edward W.....115 Montague St., Brooklyn, N. Y.
Wright, Frederick A.....Glen Cove, L. I.

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Zabriskie, William H.....Glen Cove, L. I.
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Morton, Wm. James.....19 E. Twenty-eighth St., Manhattan, N. Y. City.
Scott, George G.....College City of New York.

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CONTAINING THE NAMES OF THOSE MEMBERS OF THE ASSOCIATION LIVING OUTSIDE OF THE BOROUGH OF BROOKLYN, N. Y.

Geographically arranged.

AMAGANSETT: Finch, F. A.
AMITYVILLE: Luce, C. A.
Preston, E. F.
ASTORIA: Kindred, J. Joseph.
Moore, J. P.
Macfarlane, Robert F.
Trask, James D.
BABYLON: Hewlett, W. W.
Hewlett, Harold E.
Weekes, W. C.
BALDWINS: Steele, W. J.
BAYSHORE: Hulse, William A.
Moore, E. S.
BAYSIDE: Story, Charles B.
BELLPORT: Walling, Charles W.
BRENTWOOD: Ross, William H.
BRIDGEHAMPTON: Corwith, Silas R.
EAST HAMPTON: Edwards, David.
Lewis, Morley B.
ELMHURST: Combes, Abbott C.
FAR ROCKAWAY: Caldwell, M. Stuart.
Nammack, William H.
FLORAL PARK: Fensterer, Gustav A.
FLUSHING: Bloodgood, Joseph F.
Goodridge, Edwin A.
FREEPORT: Hammond, George H.
GLEN COVE: Cooley, James S.
Kingman, Robert.
Wright, F. A.
Zabriskie, William H.

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GREENPORT: Loper, Arthur C.
Miles, C. G.
Skinner, Barton D.
HEMPSTEAD: Finn, Charles G. J.
Lanehart, Louis N.
Ludlam, Charles H.
HICKSVILLE: Rave, Edward G.
HUNTINGTON: Carter, G. Herbert.
Gibson, William B.
Lindsay, Walter.
ISLIP: Baker, William A.
Halsey, James L.
CENTRAL ISLIP: Brink, Charles G., State Hospital.
Gibson, H. G., Jr.
Hyman, M. B.
Magness, F. H.
Murray, E. T.
Ryon, Walter G., State Hospital.
Smith, George A., State Hospital.
Walker, I. H.
EAST ISLIP: Savage, William B.
JAMAICA: Auger, Henri M.
Blanchard, Austin J.
Hendrickson, Samuel.
Meynen, George K.
Wood, Philip M.
JERICHO: Malcolm, William J.
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Frey, Walter G.
Strong, B. G.
LYNBROOK: Jacques, A. D.
MANHASSET: Niesley, Charles M.
MASPETH: Dow, Horace D.
MINEOLA: Skinner, Erasmus D.
MORICHES, CENTER: Fowler, P. Van B.
MORICHES, EAST: Skidmore, Melville.
MORRIS PARK: MacDonald, Henry.
NEW HYDE PARK: Rave, Adolph E.
NORTHPORT: Donahue, George H.
Heyen, John P.

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OLD WESTBURY: Mann, John.
OYSTER BAY: Barnes, Irving F.
Faller, George W.
PATCHOGUE: Bennett, Winfield S.
Davis, M. B.
Edwards, Lawrence S.
Overton, Frank.
Terry, Arthur H.
PORT JEFFERSON: Manly, Bradley F.
PORT WASHINGTON: Cocke, William I.
RICHMOND HILL: Scovil, William T.
RIVERHEAD: Benjamin, John H.
Blume, Samuel.
Payne, Albert E.
Young, Howard N.
ROCKVILLE CENTRE: DeLano, Frank T.
Hutcheson, J. Ensor.
ROSLYN: Bogart, Joseph H.
Ordronaux, John.
SAG HARBOR: Wells, Charles E.
Hunter, G. S.
SAYVILLE: Krichbaum, Philip B.
Merritt, Frederick C.
Van Deinse, A. P.
SEA CLIFF: Durkee, John W.
SHELTER ISLAND: Benjamin, Frank E.
SMITHTOWN BRANCH: Fanning, G. T.
SOUTHAMPTON: Halsey, Hugh.
Nugent, John.
WHITESTONE: Folger, Rupert.
WOODSIDE: Barker, Herbert L.
YAPHANK: Baker, Clarence A.

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